North America's newest subway:
Montreal metro now tracking
1966 target date . . . . . p. 24

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May 4, 1964

RAILWAY AGE WEEKLY

EXCLUSIVE INTERVIEW WITH C&NW's CLYDE FITZPATRICK

1

Rebuilding the North Western

p. 16

2

Making commuter service pay

p. 20

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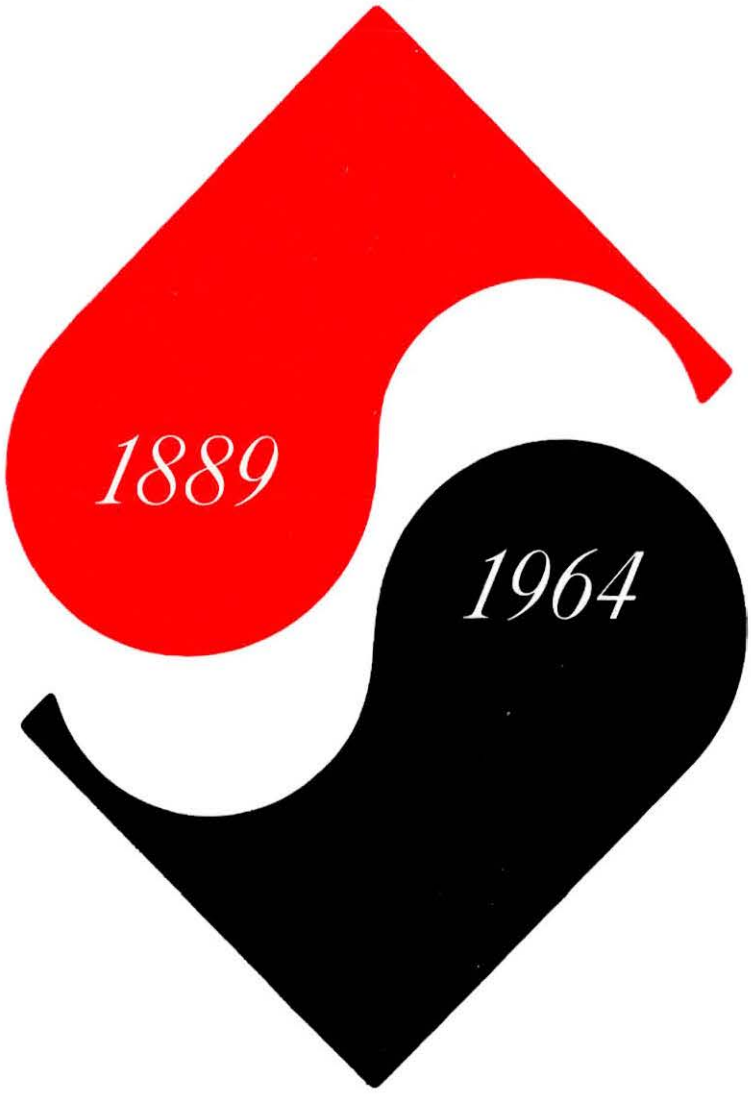

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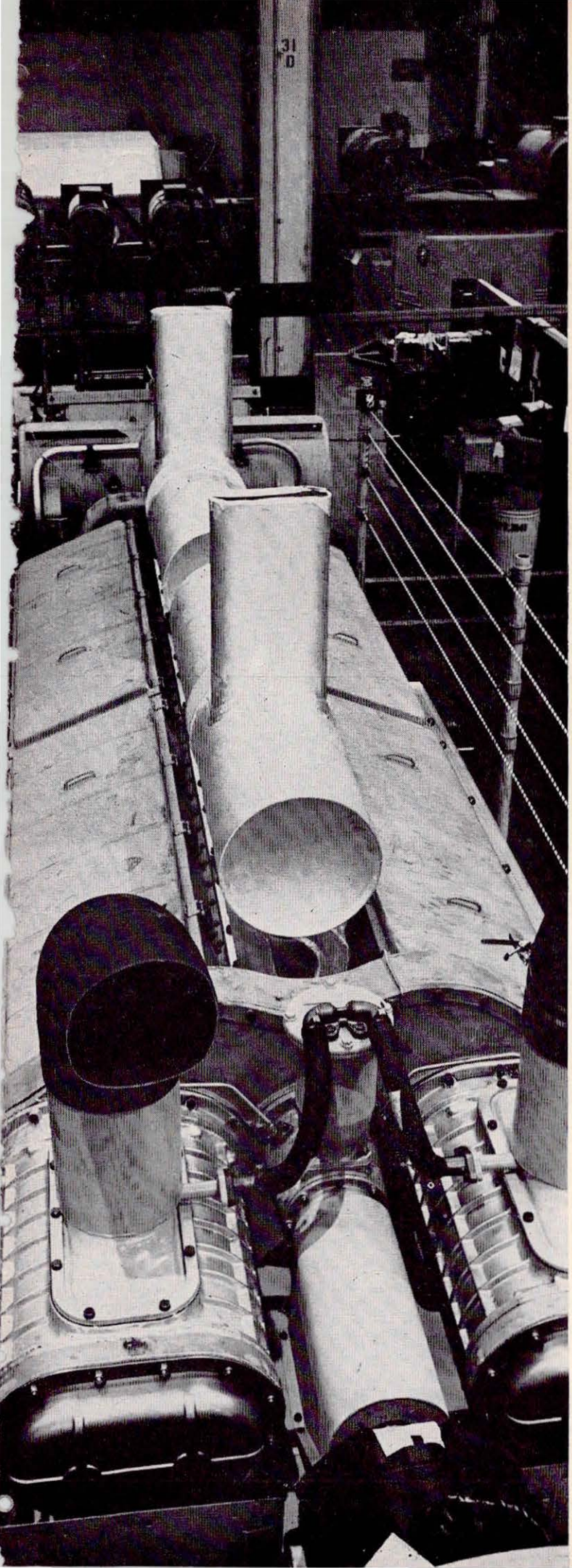

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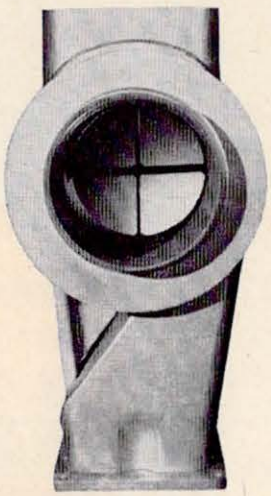

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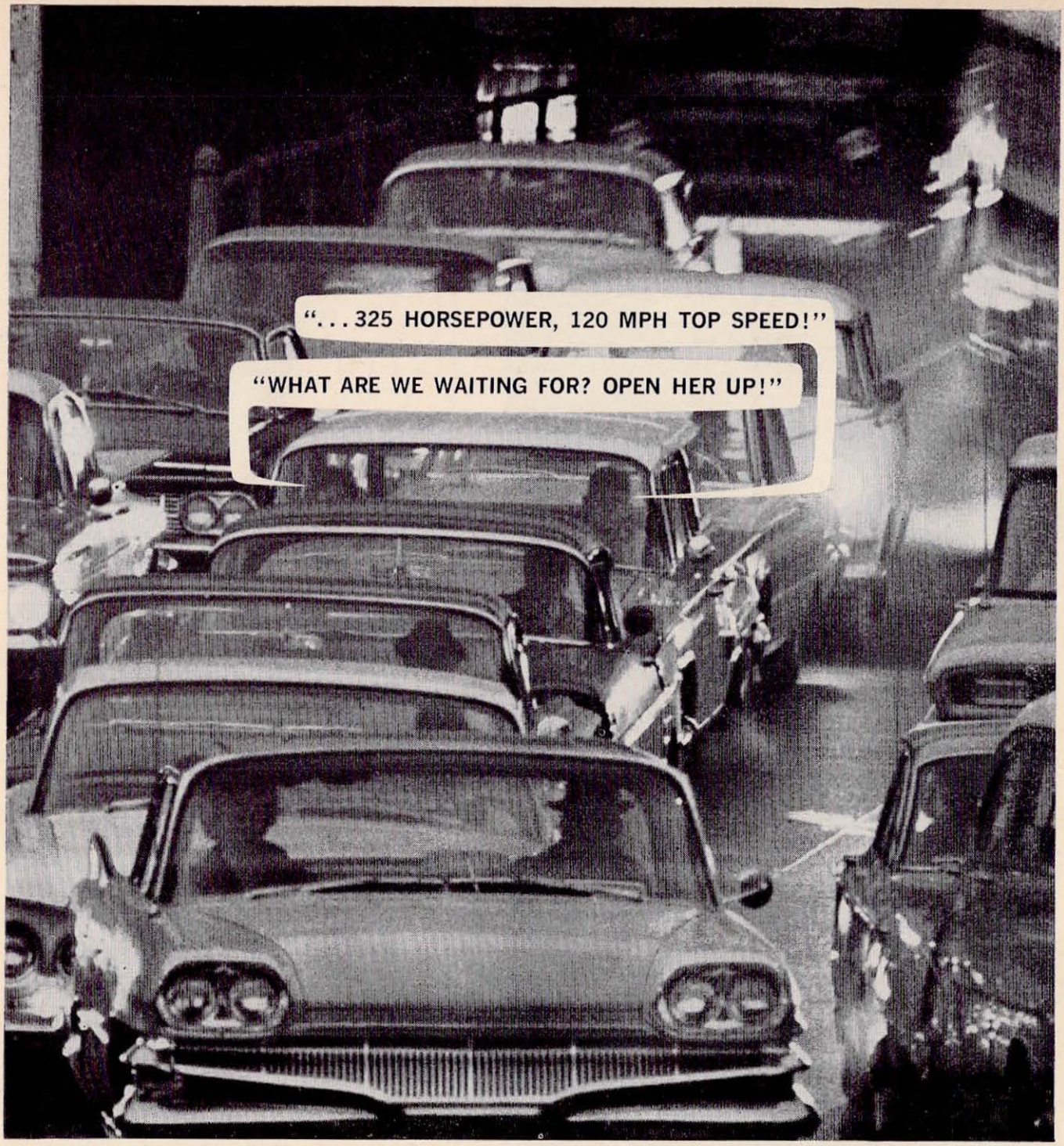

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RAILWAY AGE WEEK AT A GLANCE

May 4, 1964 • Vol. 156, No. 17

EXCLUSIVE INTERVIEW WITH C&NW's FITZPATRICK

Rebuilding the North Western

Here's how the new management cleaned up the 'mess' it found when it took over eight years ago p.16

Suburban investment pays off

New equipment worth $48 million makes C&NW one of the railroads showing a profit on commuters p.20

High court shuts last door

Action of the Supreme Court last week dashed ops' hopes for upsetting the work-rules arbitration award p.11

Montreal subway burrows on time

The 15.1-mile underground, which will now include a line under the St. Lawrence River, is rapidly taking shape p.24

Hi-Si rail pays its way on the NP

The longer life of high-silicon rail on main-line curves is said to amply justify its premium price p.33

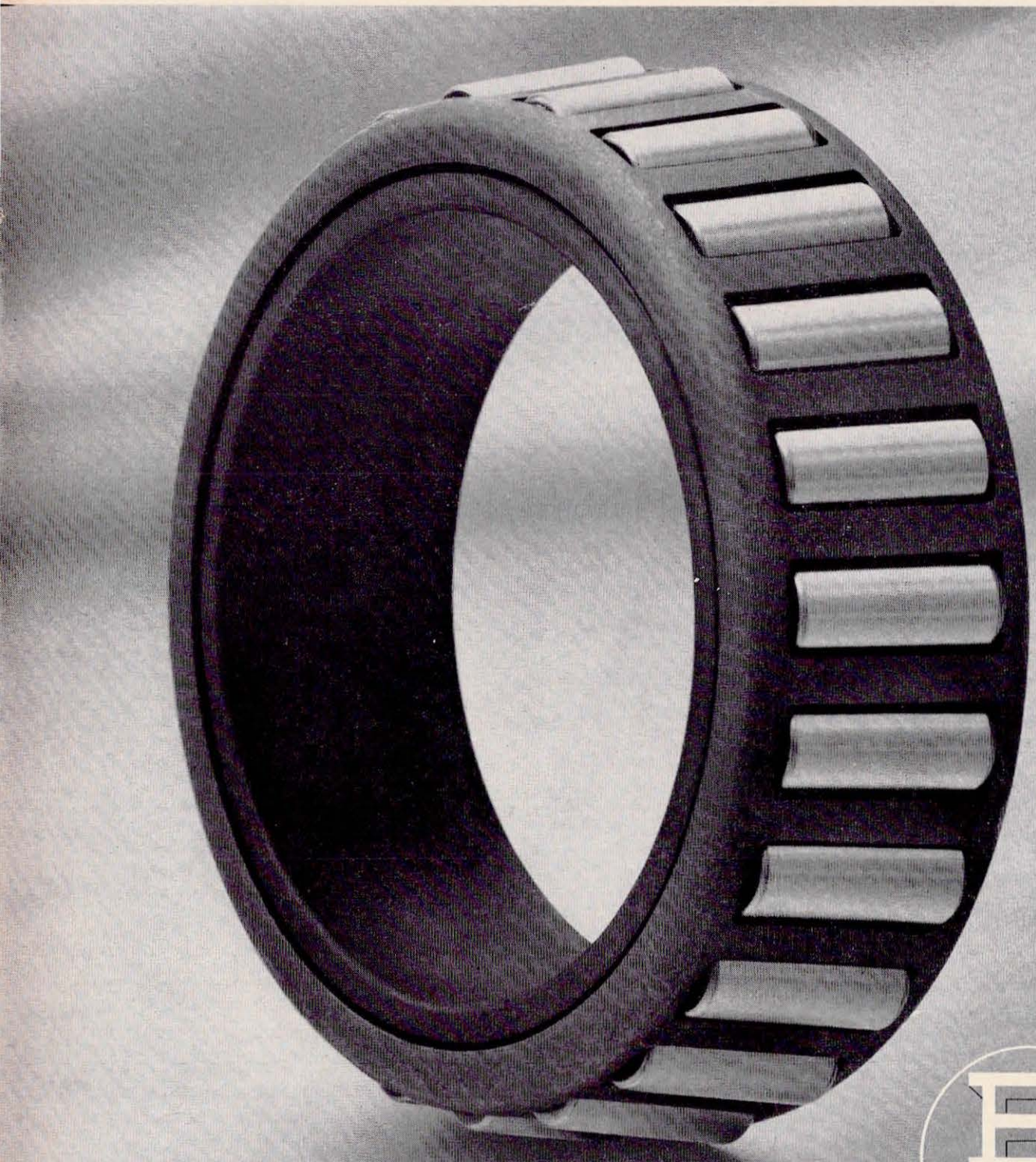
The Action Page: No victory—no defeat

Some aspects of the working-rules situation have been improved, but the issue has not been resolved p.42

Departments

Freight Carloadings 37
Letters from Readers 30
Monday Morning Report 8
New Equipment 37
New Products Report 31
People in the News 40
Railroading After Hours 34
Railway Market 37
Short and Significant 7
Supply Trade 40
The Action Page 42
Watching Washington 12
You Ought to Know 38

This is one of more than 2,000 cars Norfolk and Western is equipping with Brenco *crown-taper* Roller Bearings



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BEARINGS

SHORT AND SIGNIFICANT

Rails still holding their own as freight carriers

The railroads' share of the intercity freight business, as measured by ton miles, was 43.06% last year, the same as in 1962. The latter was the first year since 1959 in which the railroads gained over the preceding year. Preliminary ICC figures also show that the truckers likewise held their own, their share in both years having been 23.8%.

●

1964 capital outlays now estimated at $1.3 billion

Railroad capital expenditures will top $1.3 billion this year, according to estimates filed with the ICC by 97 of the 104 Class I line-haul roads. The reporting roads expect to spend $1,272 million, 25.3% more than their 1963 outlays. The estimates also indicate that expenditures in the first half will exceed $732 million, up 63.4% from last year.

●

Traffic upturn seen as strike threats fade

Settlement of the long-drawn-out work-rules dispute will have a buoyant effect on railroad traffic, thinks Pennsylvania Chairman Stuart T. Saunders. As he sees it: "For a long time, traffic volume of the railroads has been depressed by recurrent strike threats. Now I believe we can look for an upturn in business commensurate with the accelerated pace of the entire economy."

●

First Tenelon tank car goes into service

North American Car last week unveiled an 18,000-gallon tank car with a new look—it's the first tank to be built of U.S. Steel Tenelon stainless steel. The car, designed for hauling dry commodities, will go into service for American Potash & Chemical Corp. R. E. Hallberg, vice president and general manager of North American's Railroad Car Division, said Tenelon was chosen because of its high resistance to corrosion.

●

Big job lies ahead for rails

AAR President Daniel P. Loomis warned last week that railroads "must be literally turned upside down" to keep pace with gigantic government spending programs for highways, water and air facilities. Public outlays for competing modes, he observed, "would long ago have railroaded us into extinction had it not been for our technological revolution . . . adversity has generated new strengths and a new will to succeed."

●

Suppliers urged to promote industry aims

Railway suppliers were told in Chicago last week that they should get out and support those things necessary for a healthy railroad and railroad supply industry—and the best way is through the Railway Progress Institute. C. F. Bayer, Erie Lackawanna vice president, purchases & stores (and chairman of the AAR's P&S Division), advised an audience of supply men to "put aside such petty differences as may exist and join together as one spirited, united people to present our case at the federal, state and local levels— and to the people—so that this great industry of ours may survive and continue to prosper."

●

NITL won't oppose demurrage hikes

Increases in demurrage charges as now proposed by the railroads (RA, April 6, p. 26) won't be opposed by the National Industrial Traffic League. The proposed hikes would make the demurrage charge $5 per day for each of the first four chargeable days, $10 per day for the next four days, and $15 per day thereafter. The shipper group had opposed an earlier carrier proposal which contemplated tighter free-time and average-agreement rules.

MONDAY MORNING REPORT

Four-point program ahead for L&D prevention?

The moment of truth may be at hand for the industry's loss and damage-prevention specialists. With L&D payout draining industry coffers at an annual $135-million-plus clip—and average claims mounting steeply—freight-claim experts are urging action at the top to brake the trends. Early last month, chief executive officers and chief operating officers began pondering a four-point program from the general committee of the AAR's Freight Claim Division urging "aggressive handling" because L&D trends have "reached serious proportions."

Action is cheaper than alternatives

Programs for reversing L&D trends have come and gone in past years. But this one—expensive though it may very well turn out to be—could be cheaper than alternatives open to top management, as L&D payments show signs of increasing at a 10%-per-year rate. Recommended by the general committee were: increased inspections of damaged freight, general improvement of the physical condition of freight cars, more pressure on employees to reduce rough handling of shipments and, importantly, a thorough reappraisal of individual-carrier L&D prevention programs—with a view to getting more effective results from the considerable cash and talent railroads are already expending for L&D prevention.

Some action already

Within a few days, a large Midwestern carrier bought the whole program and called in a top L&D prevention expert to formulate a no-expense-spared, crash program to alter its L&D performance—one of the worst in the country. Many other carrier managements were reported to be zeroing in on the deteriorating L&D problem realistically. They are, obviously, prepared to spend money to control the situation. L&D is costing the industry a cool $11 million or more every month.

The keys: manpower and information

L&D specialists know that information and manpower will provide the answers. Both operating and L&D prevention forces are the key to controlling L&D. More positive inspections of damaged freight here and there across the country have resulted in substantial reductions in L&D claims—adding knowledge that helped control L&D to subsequent shipments. Inspection forces at both origin and destination points need beefing up—and all operating forces need to join the battle against L&D. Stepped-up efforts by individual railroads alone will not do the job, however, because the majority of freight moves in interline service.

Top level backing ahead for L&D prevention men?

Uneven L&D-prevention efforts from railroad to railroad have historically pulled down the industry's national L&D performance. The recommendations of the Freight Claim Division's general committee that the carriers reappraise the adequacy of their prevention programs may very well now force a more uniform—and effective—approach. Discouraged L&D prevention specialists—who feel that force reductions in recent years have done much to undo their work—are sure that the time has come when no action is more expensive than whatever action it takes to put the brakes on the L&D problems. And there are many signs that top managements may soon flash the green light for an all-out assault on L&D.

The Hi-Level way keeps passengers traveling Santa Fe

The last of 24 new Budd-built stainless steel Hi-Level transcontinental chair cars recently ordered by the Atchison, Topeka and Santa Fe will go into service on "El Capitan" during 1964. This multi-million-dollar order, one of the largest for mainline passenger cars in recent years, is part of the Santa Fe's modernization program to continue to attract passenger patronage to their railroad. The 24 cars being added will make a total of 73 Hi-Level cars in use on the Santa Fe. With this increased fleet, Santa Fe will place Hi-Level chair cars on the "San Francisco Chief" starting this summer. The popularity of Budd Hi-Level cars on the Santa Fe started in 1954 when the first cars were introduced. For the passenger, they mean long distance coach traveling luxury. Seats are fully reclinable. Passengers ride four feet higher over the rail than in regular chair cars . . . enjoy a panoramic view through spacious windows. Hi-Level seating gives passengers a smoother, more comfortable ride with less noise and vibration. For the railroad, the Hi-Level cars mean greater passenger patronage at real savings in costs. Each car carries 72 passengers in comfort, compared to the 48 passenger capacity of a standard deluxe coach. Two cars do the work of three. Car weight per passenger is lower. Pleasing railroads—and their customers—with modern equipment designed to meet specific needs is a specialty with Budd.

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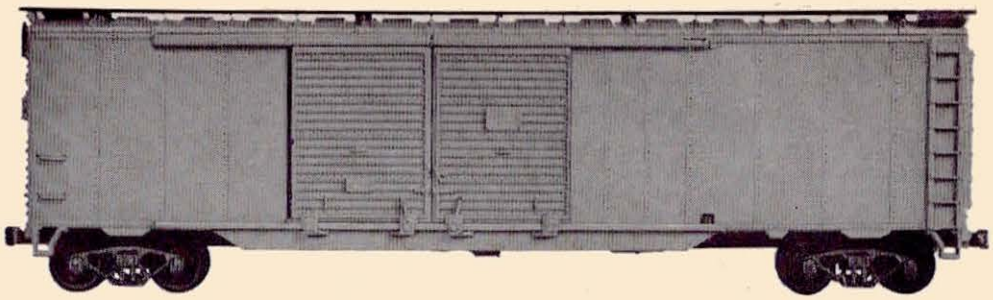

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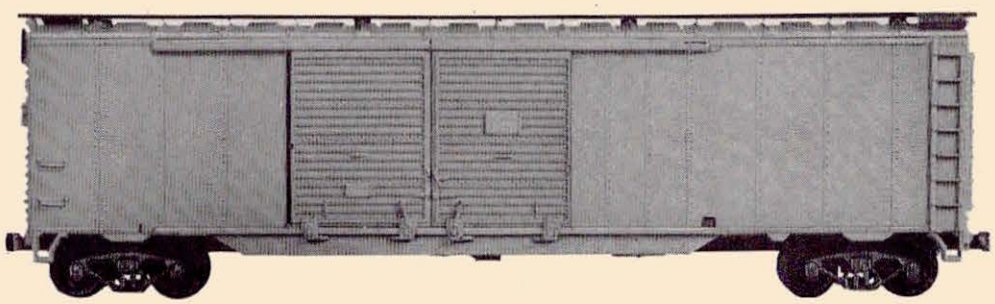

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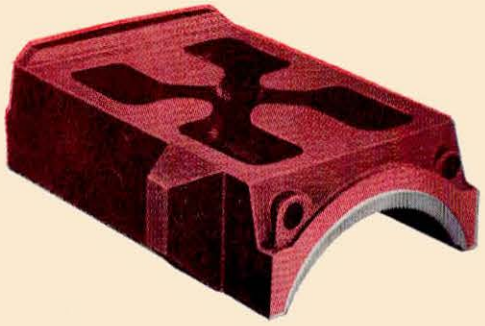

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WORK RULES:

High court shuts the last door

Supreme Court's refusal to review the arbitration law's constitutionality clears the way for the carriers to eliminate some firemen, change crews.

The U.S. Supreme Court last week was not of a mind to derail settlement of the work-rules case. In a move that came as no surprise to anyone, the court refused to review the constitutionality of the fireman-off and crew-consist arbitration law.

Thus the last door swung softly shut on the operating brotherhoods' hopes for a better deal on the two key points in the rules dispute.

● **Elimination process.** As of May 7—10 days after the court's ruling—railroads will be free to begin eliminating low-seniority firemen. About one-fourth of the present number of men holding fireman's rating could conceivably be affected—5,500 men with less than two years' seniority, 1,200 who have not worked as firemen since January 1962, and 4,800 who worked irregularly in 1962-63 and whose average monthly earnings during the period were $200 or less.

Full-crew laws, however, will make it impossible for many roads to get maximum benefit from the arbitration award's provisions. The president of one major eastern road, for example, noted last week that crew laws in three states "will deny us about 80% of the relief" which the award would otherwise have provided.

● **Back to the board.** In addition, certain conflicts over interpretation of the award itself must be cleared up before carriers and the engine-service brotherhoods know exactly how the fireman-off provision will be applied. Present plans call for board members to meet May 7 in an effort to resolve these conflicts.

The Supreme Court, in rejecting the ops' appeal, gave no reason. The vote was 8-0, with Justice Goldberg taking no part in the case.

● **No surprise.** The court's action was expected—even by the unions. They had lost an initial challenge to the award and the law in U.S. District Court, and they lost again in U.S. Court of Appeals, on a 2-1 decision. Union leaders professed belief that the split vote among the three appellate-court judges was a significant factor in their favor—but closer examination showed that the dissenting judge merely held that the lower court should have undertaken review of the law's constitutionality. There was no expression of opinion on the basic issue itself.

Refusal of the high court to review the case also blew away a cloud that had been hanging over the April 22 carrier-union settlement on the so-called secondary issues. There were strong indications that bargaining on these points rested, to a large extent, on the premise that the railroads would be able to move ahead with elimination of firemen and changes in crew consists. Acceptance of the arbitration case by the court might well have given the carriers reason to take a second look at their position on the secondary issues.

● **Costs and savings.** By one estimate, the railroads agreed to a $70-million package in settling the secondary issues. But savings possible through application of the arbitration award will far more than offset that added cost.

There's also the possibility that the industry may get a better break on taxes as an indirect outcome of the rules case. During the last stages of bargaining on the secondary issues, the carriers brought to President Johnson's attention their problems with the government regarding depreciation of tunnels and grading—which represent an investment of about $4 billion.

Under current tax-law interpretation, depreciation hasn't been permitted—because such facilities don't become "exhausted." If the tax men were to reverse their stand, however, the benefit to the carriers could run to $25 million or more per year.

● **No 'commitment.'** Both carrier spokesmen and the President deny that any commitment was made. But the problem was discussed, and the President reportedly promised fair and reasonable consideration for fair and reasonable proposals.

(A second point raised by the carriers—possible help in getting H.R. 9903, the rate-freedom bill, moving toward passage—got a similar reaction from the President, whose Administration has supported the measure. Optimism, however, lasted less than a week. On April 28, the House rules committee in effect killed the bill for this session of Congress by refusing to report it out to the House floor.)

● **Questions remain.** Although settle-

WATCHING WASHINGTON WITH WALTER TAFT

TAFT

● **DEATH KNELL FOR H.R.9903,** the controversial transport bill favored by the railroads, was sounded last week. The House Rules Committee refused to clear it. That kills the bill for this session of Congress, since clearance by the Rules Committee, the House's traffic cop, is required to qualify a controversial bill for consideration by the House. The bill was the response of the House Committee on Interstate and Foreign Commerce to the late President Kennedy's Transportation Message of Apr. 5, 1962. It was sponsored by the chairman of that committee, Representative Oren Harris (D. Ark.). Provisions most vigorously opposed were those contemplating more rate-making freedom for carriers, and partial repeal of the Interstate Commerce Act's Commodities Clause. The latter, applicable only to railroads, prohibits them from transporting commodities (except lumber and their own supplies) in which they have any interest.

THESE CONTROVERSIAL PROVISIONS were much-watered versions of the Kennedy proposals, which were endorsed by President Johnson. In the rate-freedom area, the Kennedy proposals would end federal regulation of minimum rates for the transportation of commodities in bulk and agricultural products. H.R.9903 proposed to tighten the Act's agricultural exemption (now applicable only to motor carriers) and then extend it to railroads, water carriers and freight forwarders. It also proposed to narrow the exemption for the transportation of commodities in bulk while leaving it applicable only to water carriers.

THE COMMODITIES-CLAUSE REPEALER recommended by the Kennedy and Johnson Administrations would have removed that unequal-regulation provision from the Act. H.R.9903 first proposed to leave it applicable to transportation of the agricultural products (if railroad-owned) which would become deregulated by the proposed extension of the agricultural exemption.

MORE WATERING-DOWN was agreed to by Representative Harris in his vain attempt to get the bill through the Rules Committee. His compromise proposals there would have rendered the extended agricultural exemption less liberal than the one now enjoyed by truckers, as noted above. Also, they would have kept the commodities-clause ban on the transportation of coal.

THE OPPOSITION was spearheaded by water carriers operating on inland waterways and the coal industry. They had much support from grain and port interests, and the National Industrial Traffic League asked that the bill be sent back to the Commerce Committee for further hearings.

THE ADVERSE ACTION of the Rules Committee was recorded in two 8-to-7 votes. One defeated a motion to clear the bill, and the other defeated a motion to reconsider that vote. Asked if that killed the bill for this session, the committee's chairman, Representative Howard W. Smith (D. Va.) said it did. He also said that the meeting at which the votes came was "one historic occasion when we had every member present." The chairman's vote was in favor of clearing the bill, "because it's an Administration measure."

ment of the secondary issues and the high court's follow-up ruling on the arbitration law pushed the rules dispute firmly away from crisis, several important points still must be considered.

First is ratification of the secondary-issue agreement, once final contract language is worked out. Grand Chief Roy E. Davidson of the Brotherhood of Locomotive Engineers has authority to okay the pact. But each of the other four organizations must go through a formal ratification procedure.

The Brotherhood of Locomotive Firemen & Enginemen and the Brotherhood of Railroad Trainmen must call in their general chairmen for a vote on ratification. The Order of Railway Conductors & Brakemen will submit the agreement to an executive committee made up of regional representatives. And the Switchmen's Union of North America will have to put the pact to a membership referendum.

● **Smooth sailing?** Most union observers think the settlement will be ratified without difficulty. Once before, SUNA rejected by referendum an agreement approved by union negotiators—but union sources are quick to point out that yardmen, rather than roadmen, are really the major beneficiaries in the proposed secondary issues settlement.

Several weeks will likely pass before the ratification process can begin. After that, things should move quickly—though the SUNA referendum may take another two or three weeks to complete.

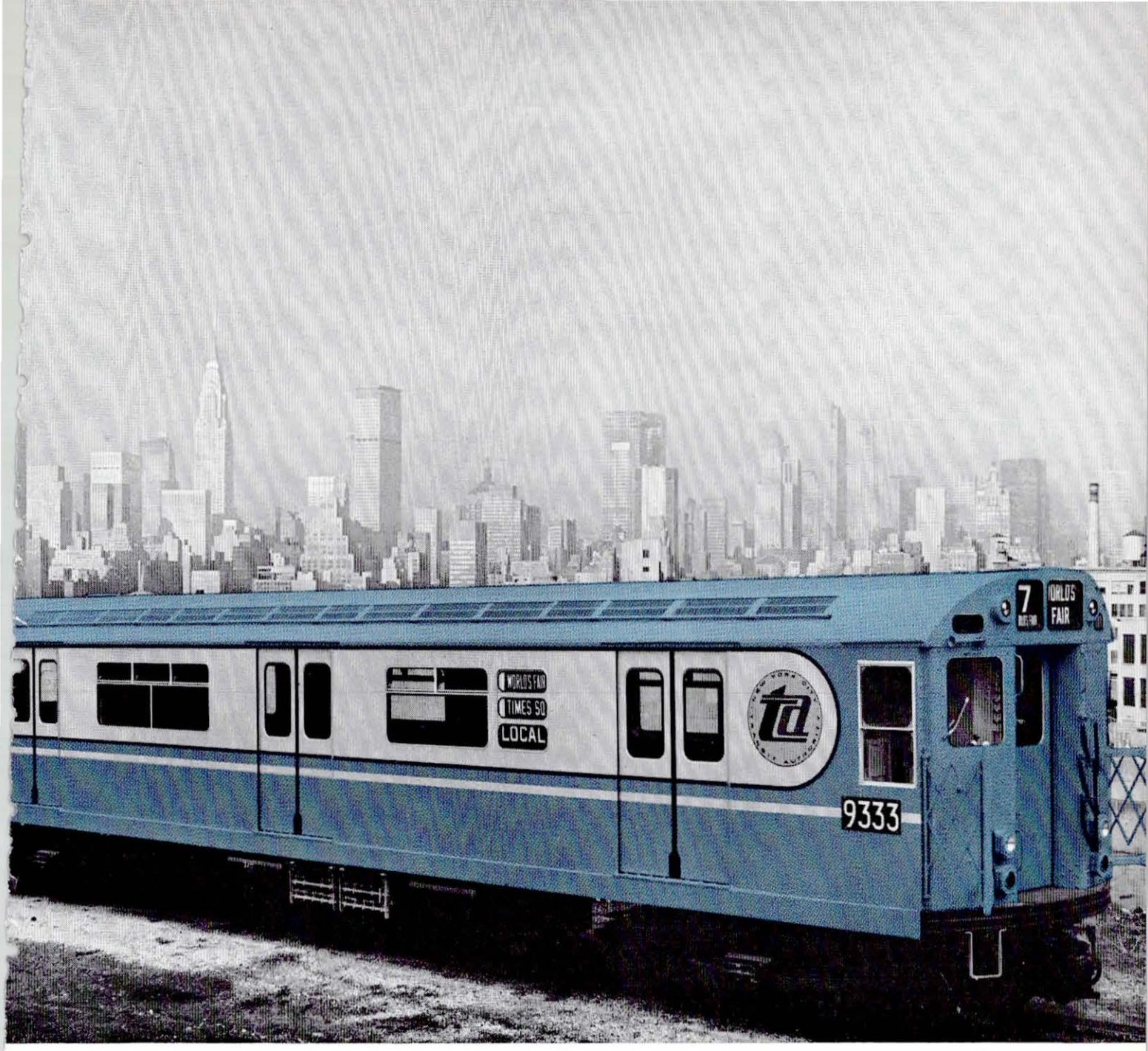
● **1966—then what?** A second major question concerns the arbitration award—and the situation that will prevail two years from now, when the effective period of the award runs out.

Both the arbitration law and the award specify that the award will remain in force for two years from its effective date, "unless the parties agree otherwise." BLF&E President H. E. Gilbert has already indicated that so far as the Firemen are concerned, expiration of the award will mean that jobs blanked must be restored.

One of the little-noticed sections of the award, however, could provide a way to head off a return to crisis when the award's time is up.

● **Continuing study.** Within 30 days of the effective date of the award, there is to be set up a national joint board "charged with responsibility for making an intensive and continuing study of the experience in road freight and yard service with and without the employment of firemen during the period that this award remains in effect."

During the three-month period before expiration of the award, the board is to prepare and issue to the parties a report based on its study. Presumably, this report could then be used as the basis for further talks. ■



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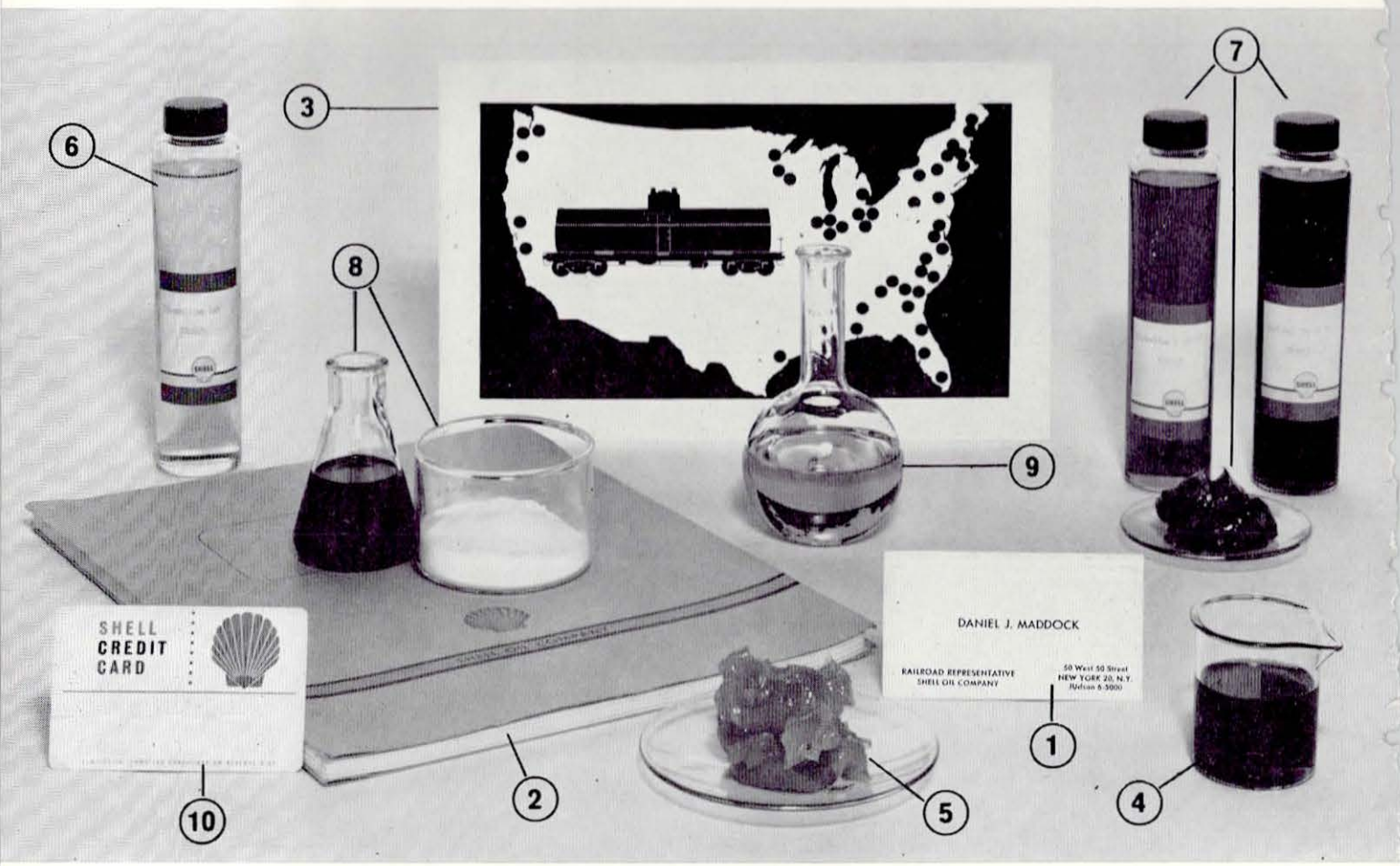

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SHELL

Bay Area to test automated transit

BARTD officials want plans for an automatic train control system. Four leading suppliers have submitted entries.

Approximately ten months from now three special test cars will be operating automatically over a 4½-mile section of line in Contra Costa County, California. Their performance will be evaluated by Parsons-Brinckerhoff-Tudor-Bechtel, the San Francisco Bay Area Rapid Transit District's consulting engineers. Final specifications for automatic train controls for the Bay Area rapid transit system will be based upon the findings of this test track program.

● **90-second headway, 6-inch stop.** Two major requirements of the new transit system will be that trains can be scheduled as frequently as every 90 seconds, and stop at station platforms within six inches of a given point.

The automatic control system will continuously record and communicate the exact location of every train at every instant throughout the entire transit network. It will have three separate sub-systems. One will provide safety-assured train spacing. Another will supervise and adjust the operation of individual trains on each transit line. The third will direct the computerized scheduling of trains for the entire transit system.

● **Suppliers.** General Electric, General Railway Signal, Westinghouse Air Brake, and Westinghouse Electric have been awarded sub-contracts to manufacture, install and demonstrate a completely automatic train control system.

The system will provide for operating three cars simultaneously on a 4½-mile test track between Walnut Creek and Concord, Calif. Two passenger stations and a scissors crossover will be at each end of the double-tracked section, and a single station at the midpoint. One of the ends will be a simulated terminal where the runs will originate. Train operation will be fully automatic including automatic routing, station stops, door opening and closing, and sign changing. All systems will be designed for fail-safe operation.

● **Attendant for emergencies.** Although the automation system will effectively perform those functions traditionally assigned to the motorman and door guard, an attendant will ride each train. He will be able to initiate an emergency brake application and communicate by voice with the dispatcher.

The test system will be evaluated in respect to three categories:

—**Safety-assured train spacing.** This will be based upon the use of the rails, divided into blocks or zones, for transmitting information toward the train. Information being sent to a given train cannot penetrate beyond that train because of the shunting action of the train on the rails.

—**Line supervision.** This will be used to dispatch trains from terminals, to initiate overriding controls, to maximize passenger-carrying capacity, and to ensure consistent operation.

—**Automatic train operation.** This will be based upon the reception of all operating instructions from signal currents in the rails. A feedback system will control and monitor the acceleration, speed, and deceleration of the train, and will make adjustments in power or braking to provide smooth train operation.

General Electric Co., was awarded a $629,510 contract to provide its automatic train control system. "The train control system automatically performs all three functions essential for modern rapid transit operation," said Norman W. Seip, manager of the equipment product section of GE's locomotive and car equipment department. "These functions are train running, train separation, and system regulating."

"An on-board train running regulator operates each rapid transit train in response to information transmitted from the wayside," Mr. Seip explained. "Safe spacing of the trains is assured by train separation equipment using the guided radar principle. The entire rapid transit system is regulated by an integrated system control."

The GE system includes Directo-Matic II control and a GE/PAC-4000 computer. This system-regulating equipment dispatches trains, monitors their operation, compares their performance with pre-programmed schedules, and initiates corrective action. Information required for system operation is transmitted to elements of the network by carrier and data link communications equipment.

A $520,000 contract was awarded to General Railway Signal Co., to manufacture, install, and demonstrate a completely automatic train control system. It is expected that a form of coded track circuits possibly using audio frequency currents will be used to provide information to the trains. (For competitive reasons, manufacturers are reluctant to provide details.)

The test track contract awarded to Westinghouse Air Brake Co., was in the amount of $654,480. It is anticipated that WABCO will use audio frequency codes to provide control information to the trains (special test cars).

● **Computer control.** Heart of the entire rapid transit system, report WABCO engineers, is a solid state digital computer which controls all operations of the system including scheduling, dispatching, routing, speed control, and running time.

Communications modules, each containing voice and data communications stations, monitor whether all systems are operating. The operations control console includes a panel for monitoring and control purposes; a panel for composing and addressing command messages to each train and to the wayside sub-system; a telephone; and a speaker and microphone for voice contact with attendants on trains and in stations.

Peripheral equipment will include an automatic typewriter connected directly to the computer which is programmed to respond to inquiries by the supervisor and to type out replies and information messages; a printer which can print 300 lines per minute; and a card reader.

A $567,000 automatic train control contract was awarded to Westinghouse Electric Corp. Computer direction will play a key role in this system. The computer will make split second decisions, relying for its intelligence upon electronic signals flashed by the cars.

● **'Fail safe.'** Instead of visual signals normally encountered on railroads and subway lines with human hands at the controls, the cars guided by the Westinghouse system will transmit "fail-safe" high frequency signals to signal wires strung alongside the track. In the unlikely event that a signal is lost between the train and its control point, the train and others following would be halted immediately.

Although attendants will ride trains for security reasons, computers will direct train speeds, starts and stops, car door openings, individual train performance and even the recorded announcements at stations and aboard trains. Computers located at each station will be supervised and coordinated by a central control computer which will establish schedules, program operations and supervise and monitor the over-all performance of the trains. ■

EXCLUSIVE INTERVIEW WITH C&NW's FITZPATRICK—PART I

Rebuilding the C&NW

North Western's new management team found 'a real mess' when it took over eight years ago. Plant and equipment were in a state of obsolescence; and, the new managers felt, there were too many people milling around the property. Here's how they set about cleaning up the mess.

When Chairman Ben W. Heineman and President Clyde Fitzpatrick took over the Chicago & North Western in 1956 the road was leaking money at every pore. In Mr. Fitzpatrick's words: "We couldn't see the September payroll in May." At the end of April 1956, the C&NW was already $7.5 million in the red. By mid-year the deficit had shot past the $10-million mark. C&NW's new management team, by severe cost-cutting, chopped that year's deficit down to $5.5 million.

C&NW has not turned in a deficit since—though refunds of $18.8 million in state and federal taxes helped tide the road over years (1957, 1959, 1960 and 1962) when operations resulted in losses. With almost $200 million in capital expenditures plowed into plant and equipment since 1956, North Western turned in a solid $8.5 million net last year (raised to $21.4 million by tax refunds).

In the following interview C&NW President Fitzpatrick describes the all-out campaign to rebuild North Western —and how his road is tackling its role in the Midwest in the months ahead.

Q. Mr. Fitzpatrick, what confronted North Western's new management in 1956?

A. A real mess. Plant and rolling stock were mostly obsolete. We had a lot of equipment in bad-order condition. The immediate problem was to start rebuilding the plant and make repairs to the equipment.

We also had a manpower problem that went along with the plant and equipment obsolescence. We had too much manpower for the size of our

From red ink to black

property. We actually worried about meeting payrolls.

Q. What were the first changes that C&NW's new management embarked upon?

A. The first thing we saw was the inefficient use of motive power. Diesel power was not efficiently assigned and, to make matters worse, it was intermingled with steam power. Within six weeks we were able to eliminate almost all steam power. By reassignment of diesel power, along with changes in maintenance methods, we were able to dieselize the property completely with the power we had on hand.

In fact, as time went on, we were able to reduce the number of diesel units on the property. When we came to C&NW we had 705 diesel units. We retired a small number of locomotives prior to our acquisition of the Litchfield & Madison. We got more diesels with the L&M. Later, of course, we acquired another fleet of diesels when we acquired the Minneapolis & St. Louis.

But today we operate with fewer diesel units than we found here plus our acquisitions.

Q. What are the main reasons behind C&NW's ability to operate with fewer diesels?

A. Passenger-train reductions would have to be a big reason. We have reduced C&NW's passenger deficit from about $18 million in 1956 to about $5 million last year. But the biggest reason is that we are more efficiently scheduling the power we have—that plus our present maintenance policies.

Q. Did C&NW also change car-maintenance facilities?

A. We sure did. We had 14 separate points where cars were given heavy repairs—or allegedly given heavy repairs. Now 14 repair facilities—which included necessary inventory and supervision—were intolerable, especially since all the repair points were obsolete. So, one of our first jobs was to look for a suitable location, centrally located on the property, where we could replace all 14 facilities with one modern car-repair shop. This we did—at Clinton, Iowa.

Q. Clinton Shops now handle all C&NW's heavy repairs?

A. Yes. Last year we put 6,000 cars through Clinton Shops for heavy repairs and this year another 6,000 cars are going through. All 14 of the old shops failed—by a wide margin—to do as much work as we are turning out at this one point now.

Q. Is this work being done for less money?

A. Definitely.

Q. What were the changes to the physical property that C&NW's new management embarked upon?

A. We immediately started a program of putting in more ties and more ballast. One of the early things we did was to acquire a small mountain of quartzite at Rock Springs, Wis. We now have our own source of high-quality ballast which we think is superior to anything used before on this railroad. We take a minimum of a half-million tons per year out of the quarry. Prior to its acquisition, C&NW used a lot of gravel ballast which didn't even compare in quality to the quartzite rock.

Q. Did you retire any major facilities?

A. Aside from the shops I mentioned earlier, we did immediately survey the railroad to see where we could go to single track. We have taken up a sizeable number of miles of track from former double-track territory. We went to single track on our Twin Cities line; we went from double to single track from Milwaukee to St. Paul.

When we went to single track we left adequate sidings and signalling. All we need now to make CTC territory of several lines is to install the switch machines and other automatic features.

Q. Are you planning any moves in that direction?

A. We have so many other places at the moment where we can get a greater return on investment that those projects will just have to get in line. Eventually, we will probably go to CTC—after we complete other projects with a higher priority.

Q. How did C&NW's new management move to correct the manpower problems you mentioned?

A. When we came here we found the divisions were operating on a departmental basis. For example, the mechanical people on a division reported directly to Chicago. So did the operating people. We also had three general superintendents in three regions who had supervision over the division superintendents. Division superintendents had practically no authority. In other words, we had an extra layer of supervision—without any benefits that we could see.

As far as our freight-car fleet is concerned, we purchased 1,000 new box cars shortly after we came here. That was the largest order we gave. We also took delivery of 500 gondola cars which had been ordered by the previous management. Other than that, acquisition of freight cars has mostly been specialty cars that we've gotten. The large specialty car is becoming popular. For example, we will take delivery on 220 jumbo covered hoppers commencing in July. To go out today—particularly until we have our bad-order situation cleaned up—and purchase a thousand new cars of any type, well, I just wouldn't be in favor of it until all repair work is done on usable present equipment.

We are spending a great deal of money each year on specialty equipment—which you don't buy in sizeable lots. You buy 25 cars of one kind to go into an automobile parts pool and 50 cars of another type to go into a canned goods pool. The price of these cars is such that the outlay in total could buy a substantial number of standard cars.

Let me explain why we haven't bought any gondolas. We found some 4,000 gondolas around the property in good shape except for floors and paint. They were being used mostly in pulpwood service—where you can use a car without a floor. But the cars were limited to that one-commodity service. At the same time we were renting gondolas on a per-diem rate to handle sand, gravel, coal and other commodities that need to be moved in cars with good floors. Reasons like those are behind our car-repair programs.

Q. How does North Western's per-diem situation stand now? Are you a credit or debit road—and how will the new per-diem scale affect C&NW?

A. For the first three months of this year—again, mostly due to our repair program—we are happy to say we are a credit road. I can't promise that this

will continue throughout the year for every month, but certainly our per-diem debit this year is going to be substantially reduced from what it was over the past number of years.

It is a little early to tell about the new per-diem charges. We have, by the way, put all our per-diem work and all of our car-record work on our new computer. We will be able to keep a much closer watch on the per-diem situation than we have in prior years. With the help of the computer we should be able to tell pretty quickly just where we benefit or lose under the new system. I think we are going to at least break even—because of our acquisitions of high-priced specialty cars and because of our car-repair programs.

For example, we had a fleet of box cars which were what we call a composite car. We repaired them at Clinton last year. Those cars were built during World War II—when steel was scarce—and had wooden sides. They were fine cars with good solid underframes, good ends and good roofs, for the most part. Last year we set up a line at Clinton and made all-steel cars out of them. We installed roller bearings and nailable steel floors in the cars—which boosted their value, because of the heavy capital investment, into a higher per-diem bracket. This is just one of the ways in which we will gain under the new per-diem set-up.

Q. How do you feel about box-car hardware, Mr. Fitzpatrick? Do you think things like cushion underframes, roller bearings and bulkhead devices justify the capital investment needed for such equipment?

A. Very definitely. Railroads want to stay in the transportation business and they will have to furnish cars equipped to take care of their customers. Otherwise the business is going to go more and more to competitors—and to private carriage. I think we must provide the special equipment that can reduce costs to our shippers and to ourselves—if we want to continue to handle the traffic.

Q. Mr. Fitzpatrick, what about the branch lines on C&NW that generate only rather inadequate agricultural traffic? What is North Western's policy on branch lines?

A. We inaugurated a branch-line policy shortly after we came to the property. We were told when we came here by many persons—leaders in finance as well as in railroading—that one of the first things we had to do on C&NW was eliminate a lot of branch-line mileage.

After we looked over the situation we disagreed with that point of view. While it is true that we have eliminated a few branch lines, we follow a policy of retaining every branch line that we can possibly make pay or break even.

When we dieselized the property—this helped make branch-line operations more efficient, which in turn helped keep the branch lines in service. The savings from our central-agency program also have contributed to retention of branch lines. When we can eliminate unneeded firemen and make other changes we seek in work rules modernization, the resulting increase in efficiency will help make the branch lines self-supporting.

So, we eliminated the positions of general superintendents and gave the division superintendents authority to operate their portion of the railroad. We also gave the superintendents authority to supervise the departments which had been reporting to Chicago. Our division superintendents now are masters of their territory in all departments. They have jurisdiction over the mechanical people, the engineering people and others.

There is no question but that C&NW has a better managerial set-up by this elimination of needless supervisory positions. When you've cut out an entire level of unnecessary supervision, you save a lot of money. And, by the way, we also had two general managers in addition to the general superintendents. We eliminated one of the general-manager positions.

In the same way, because of this closer supervision we similarly found surplus manpower at lower levels—and were, over the years, able to reduce our manpower requirements by a substantial percentage of what we found on our arrival—and do even more and better work.

Q. In that same area, Mr. Fitzpatrick, did C&NW go to the outside for management talent?

A. Yes. We found it necessary to bring in some supervision from other railroads. We waited some time to do that—we adopted a policy of giving everybody here a fair opportunity. But some of the supervision just had to be replaced.

Q. Having gone for the "right now" needs of management, did you at the same time try to fill up the pipeline in back of C&NW's top management?

A. We didn't bring in very many people as back-up men at first. But now we have reached down in the younger echelons and done things like putting assistant trainmasters into training programs, training youngsters from the mechanical department to be foremen and so forth. We feel we are getting to be pretty well backed-up in just about all departments.

Q. How about the morale on the

'We are generating funds now that enable us to go further every year. Our new piggyback terminal at Proviso is a case in point. We spent over a million dollars there . . .'

North Western in that period?

A. Well, I think any time outsiders are brought in and changes are made morale is bound to suffer—at least temporarily. But after people see an improvement in operations—and recognize it as such—their feelings change.

Morale has improved to the extent that we think it is excellent. Our suburban service is a good example of this. The public had been harassing our suburban conductors and trainmen because of dirty equipment and late trains. Naturally, morale was low, especially when we took off the heavy-losing through-passenger trains. I think our suburban employees had the feeling that the next thing we would do would be to get out of the suburban service.

But when we completely dieselized the service and then went on to buy $42 million of new equipment, our employees realized we were in the suburban business to stay. Morale improved immediately. Even the appearance of our crews reflected a sudden jump in morale: Personal appearance perked up noticeably. I think our suburban service people have as high a morale as I've seen in any commuter service in the country.

Q. Is this high morale reflected in other departments?

A. Yes, it is. The engineering department is another good example. When you give these folks more ties, more ballast, more rail and then let them rebuild the railroad—morale improves immediately.

Q. By the way, C&NW did mechanize its maintenance-of-way operations?

A. Yes. We have invested a sizeable sum in roadway machinery. C&NW had very little of that when we came here. Now each division engineer is well-equipped with modern track equipment. We have purchased about a million dollars' worth of such machines every year.

We are generating funds now that enable us to go further every year. Our new piggyback terminal at Proviso is a case in point. We spent over a million dollars there last year. We were not able to take care of that sort of project before. We put about $6 million into our Clinton Shops in about one year. When you get things like that behind you—you can give each department more money for improvements of significance but of lesser importance.

Q. And also for reducing North Western's bad-order ratio?

A. That is right. By the end of this year our bad-order ratio will compare favorably with that of almost any other railroad in the country.

Q. What was the bad-order ratio at its worst in the early years?

A. About 15%. By the end of this year we will be down to 4% or maybe a little under.

Q. Mr. Fitzpatrick, how about additions to C&NW's car fleet in recent years?

A. We have, of course, replaced all of the road's suburban equipment. We now have 210 double-deck cars which have replaced 417 old cars.

We are modernizing our power every year. This year we are getting 20 new GP35s. These locomotives will replace 28 old diesels. Replacement of power will take place every year with a certain number of units on a regular basis.

All these things will let us put dollars into rebuilding many of our branch lines. We'll keep them in better repair than they have been for years. As a matter of fact, because of our branch-line policy, these secondary lines on C&NW are better today than they were in 1956 when we came here.

Q. Mr. Fitzpatrick, what changes have come about in C&NW's debt position between 1956 and the present?

A. Well, as far as equipment debt is concerned, that has declined every year. We've made great progress in reducing debt—but the nature of North Western's debt has been changing. We have, since 1956, purchased the L&M and the M&StL railroads—and that, of course, increased the debt, even though the present debt represents less of a burden on the property upon which the debt exists. But, in other categories we have made progress in reducing debt and clearing arrearages on our income bonds and clearing up sinking funds. Today we are completely clear on any arrearages in interest and sinking funds on our securities.

Q. Is North Western's present level of business and profitability enough to make the debt easier to carry than in former years?

A. We are in a much better position to handle our obligations today than we were a few years ago. We're in excellent shape.

Q. What changes are now in progress on North Western that will result in a further strengthening of the property?

A. Well, we're active in many areas. Our accounting functions have been modernized and our responsibility accounting system is, we believe, unique in the industry. As a matter of fact, I would say we're about as well mechanized in accounting as any railroad property I know of.

Generally, since we have eliminated a lot of waste, we are now able to spend money to improve facilities we couldn't take care of in the beginning because we didn't have the money to do everything. We have been able to spend our money for the past two or three years on projects like expanding our TOFC operations, track work, rebuilding suburban stations and the like.

Q. What lies just ahead for North Western?

A. A lot. We strongly believe in adjustment of rates to attractive, yet compensatory levels—and have taken the initiative many times in that direction. We believe railroads need volume traffic. To secure that volume traffic, rates have to be adjusted to attract volume commodities to the railroad. For that reason one of our big interests has been in the rate-making field.

We hope that pending legislation will brighten things for C&NW. While we are not completely satisfied that the rate bill does all that we would like to have done, we are convinced that it is a good start in the right direction.

We also believe that elimination of waste and inefficiency which presently result from outmoded work rules is a necessity. It is not only an obligation of management to operate efficiently, but also the American public is entitled to railroad transportation as efficient as we are capable of making it.

Then, too, there is the need for consolidations. I think they are a must. They will enable railroads to eliminate duplicate facilities and increase average hauls thereby increasing over-all efficiency and ability to do a better transportation

job. That, in turn, will enable railroads to share their savings with their customers through attractive rates. Ultimately, of course, the public at large will benefit. We feel this must be done if railroads are to continue to handle their share of the nation's traffic.

Q. Mr. Fitzpatrick, there have been people who have suggested that railroads were stabbing their best friends by tending to ignore inland shippers in rate making, thereby forcing some industry to move to waterside locations so they could stay competitive.

A. I don't agree with that. I think if the pending rate legislation prevails—whereby we can adjust grain rates and other bulk commodity rates—that inland plants will be just as well off as any waterside plant. We have wanted to do many things in rates which, to date, we have not been able to do.

If an inland plant has suffered—and I am not saying that possibly some have not suffered—all too often it has not been the railroads' fault. Railroads have not been free to do anything about it.

Q. Has North Western tried to help industry in its territory that has been disadvantaged by competition?

A. Yes, as a matter of fact. One example is the iron-ore industry, which—because of competition from foreign countries and the depletion of the very high grade of ore in our territory—has been very hard pressed the last two or three years.

We could foresee complete abandonment of certain iron ore ranges on our railroad unless some help was given to them. They have many problems. They are plagued by heavy taxation in some areas. In other areas they have to pay high royalties on acreage. Labor problems and transportation costs also have been part of the over-all problem.

The North Western acted by reducing rates. We reduced the costs to the producers by substantial rate reductions on volume iron-ore shipments. We are told that we saved some mines in certain areas which today would be shut down if we had not done our part in transportation.

Q. Mr. Fitzpatrick, what work is yet to be done to the North Western?

A. Well, I think, for the most part, our job for the foreseeable future is to continue to work toward making the railroad as modern and as efficient as we know how—taking full advantage of everything technology has to offer in better power and cars and improved procedures in every part of our operations. In other words, we won't be satisfied unless we can say every day that the C&NW is better than it was yesterday.

PART 2

Suburban investment pays off for C&NW

North Western is one of those rare roads that show a profit on commuters. One reason: $48 million worth of new equipment.

One of the few success stories in rail commuter service in recent times has been written by the C&NW. In 1963, C&NW's suburban operations produced $203,000 in net income from revenues of $14,245,000. The $203,000 net was chalked up after interest of $1,372,000 was paid on the $48 million C&NW spent for suburban equipment in its modernization program. Traffic is running ahead of last year and C&NW feels its suburban operations will continue to be self-sustaining unless traffic is reduced by competition subsidized by public funds. Here, Mr. Fitzpatrick gives some details of the success story.

Q. Mr. Fitzpatrick, when the present management arrived at the North Western, what was the condition of its commuter operations?

A. To state it bluntly, it was bad. No one was happy about the suburban service—commuters, employees or management. Equipment was old and in need of repair. Much of it was originally designed for intercity rather than suburban service. The commuter fleet as a whole was obsolete. Power was a mixture of steam and a few diesels. To make matters worse, delays were just too frequent.

We corrected the power situation rapidly with the elimination of steam engines, but the condition of the coaches disturbed us greatly. Too many did not have the high capacity required in suburban service.

We saw immediately that the job was not one of repairs but complete replacement for this highly specialized kind of service. But we also recognized the fact that unlike many non-paying through passenger trains—which were non-paying because they were not used by the public—that condition did not prevail in our commuter service. In other words, we not only had a market, but a growing one.

In a situation like this, there was no likelihood of abandoning commuter service even if we wanted to. The obvious approach, as we saw it, was to make the best of our commuter situation by building a completely new type of commuter service. We had 16 double-deck cars that were efficient and of high capacity. They came closer than anything else we explored to the answer to our equipment problem. Of course, we also recognized that any major changes we undertook would involve heavy investments of funds.

Q. Did North Western's management make studies of the operating area—to establish what trends were ahead for both the near and long-term future?

A. Yes. We had access to reliable projections of population growth in our suburban territory. There was a continuing study on this subject by our own people. We also hired a professional market-research firm—the A. C. Nielsen Company—to make a thorough survey of our territory. We didn't presume we knew all the answers just because the railroad had been in commuter service for a century. The independent research was very helpful to us in many ways. One thing we were sure of: Our suburbs were growing and we were convinced we had to modernize and prepare for even greater patronage in the future if we hoped to be competitive with modern expressways that were then under construction.

Summarizing our activity with respect to equipment, we replaced 417 old cars with 200 modern double-deckers having a greater total seating capacity. Since the abandonment of the North Shore electric line, we expanded our fleet by purchasing 10 more double-deckers. The progress of our suburban service recently has been such that I wouldn't be surprised if we have to buy some more double-deck coaches in the near future.

Q. Wasn't it at the time you were exploring the equipment situation that you developed the push-pull type of operation?

A. Yes it was. Under conventional operations, locomotives coming into our Chicago terminal—which is a stub-end terminal—had to be backed out and, particularly with steam engines,

C&NW may soon be in the market for more double-deck commuter cars like these.

turned, for movements outbound. The same situation was true at the other end of each suburban train run.

To avoid the need for turning was the reason why the first diesels in our suburban service were the so-called general-purpose type. But this still didn't eliminate switching of locomotives at the end of runs. This bothered us—and I couldn't forget my experiences with Illinois Central's electric commuter trains that can be operated from either end. I was convinced this type of operation could be applied to conventional diesel-powered trains by piping the controls and electricity through the cars and building control cabs in a number of the double-deck coaches.

Our people worked on this project and, with the help of equipment manufacturers, we finally developed the push-pull equipment we have today. I might add that it has worked very well. By going to the push-pull concept, we can provide a much more efficient operation than would be possible under the old methods.

We also have taken full advantage of the diesel locomotives: All those in our suburban service have auxiliary generators providing electric power for lights, heating and air conditioning of the cars. One important result has been elimination of air-conditioning generators under the cars, as well as heavy steam piping. In fact, the complete absence of equipment and gadgets under our cars is quite noticeable. What's more important to us is that this absence of undercar equipment has saved us about 15 tons of dead weight per car.

This also has a direct bearing on maintenance, which is so much less on our double-deckers than on conventional coaches that there is no real comparison. These new cars have very little that requires costly maintenance. The air-conditioning units are inside the cars over the ceiling in the vestibules, and, as I've already pointed out, they have no individual generators. All power comes from the locomotive. Units require no fueling as do cars with conventional air-conditioning equipment.

Again with maintenance costs in mind, we told the manufacturer that what we wanted was a car that would be attractive in appearance, inside and out; have a seating capacity of at least 160 persons per car, but still be comfortable and roomy, and be capable of being cleaned, if necessary, by hosing down the interior. While I'll admit that this seemed quite an order at the time, this is a good thumbnail description of our cars. Windows are large, but of tinted glass. This makes costly window shades unnecessary. There are no painted surfaces inside the cars, even though they are colorful. Such surfaces as walls and ceiling are of textured vinyl permanently bonded on metal. Exposed metal surfaces are either stainless steel or aluminum. Seats have foam-rubber cushions upholstered in attractive but durable vinyls. So durable are these interiors that coaches three or four years in service still look like new.

Q. What about activities in the non-equipment aspects of your commuter operations—things like ticketing, advertising, marketing?

A. While intercity passenger service has been shrinking for many years, our suburban service has been growing in volume of business. Today our annual suburban revenues exceed $14 million, while intercity passenger-train revenues were less than $6 million. With the decrease in intercity service, we have focused increasing attention on the much larger commuter operation where there is a growth potential. While anyone in the area served by our suburban trains is regarded as a potential rider by us, our principal market is the motoring commuter—and much of our merchandising effort is directed at him. For the past several years, for example, we have been wooing motorists with radio commercials beamed at them during the morning and evening rush hours.

Incidentally, while we made major changes in equipment, we also modernized our commuter ticketing. All of our multiple-ride commuter tickets today are of the "flash" type, good for unlimited rides for the period purchased and requiring no punching by the conductor. Passengers place their flash tickets in appropriate holders and are not disturbed while crews check tickets. Since we inaugurated this type of commuter ticket, we have also made it available to our customers by mail. Today some 8,200 persons obtain their commuter tickets automatically every month in this manner. I understand there are some other railroads that sell suburban tickets by mail, but I believe we sell more monthly tickets under this plan than any other line in the country.

Q. How about expansion of commuter operations?

A. Today we have more suburban service than ever before in the history of the company. In fact, we would welcome logical opportunities for expansion. As a matter of fact—this is a volume service: I'd love to expand it. A recent example of this took place when the North Shore line discontinued its service. We immediately added service, added stops to existing trains and extended some trains to Kenosha. In fact, we even added a couple of experimental trains between Chicago and Milwaukee. We also have provided regular week-end special service for Great Lakes Naval Training Base. And, as I have mentioned, we purchased 10 more double-deck cars at a cost of $1.6 million. All of this was expansion to handle additional commuters. And I hope there's a lot more expansion to come.

Q. Do you feel that sociology is with your commuter service as Chicago gets more congested?

A. Yes I do. When Chicago's expressways were opened we lost a very sizeable number of passengers. But Chicago's expressways are already obsolete in that they are handling more traffic than they were designed to handle—and they're not even five years old. We feel we have regained some of the business we had lost to the expressways, although it is a little hard to calculate because of the sharp increase in passenger count following the North Shore abandonment. We also definitely notice an increase in riders on off-peak trains.

Q. Has there been a year-by-year pattern of people coming back to the commuter service?

A. I think a definite pattern would be discernible except for the fact that

(*Continued on page 30*)

Monon was sold on lower operating costs of higher hp locomotives. Better customer service. Ultimate increases in ton-miles of business.

Nine 2,750 hp locomotives in place of fifteen old 1,500 hp units.

That's how Monon is meeting its motive power needs. And so can you.

We've always said it. Old locomotives are no bargain. They produce less. Cost more to run. Cost more to maintain.

W. C. Coleman, board chairman of the Chicago-based Monon Railroad, says it this way: "Acquisition of the Century locomotives will have a direct bearing on our cost-cutting program . . . We expect to achieve substantial operating and maintenance economics and assure greater on-time dependability for shippers."

He's talking about ALCO's Century 628. Driven by an ALCO 251-C, an improved version of the ALCO 251 16-cylinder diesel engine.With 6 traction motors.

The Century 628 doesn't just promise. It delivers. Fuel savings—the lowest parasitic load per hp of any locomotive. It features a sealed electric control compartment. Most modern and complete static control system in service. Improved temperature control system. New air-handling system. Most efficient auto-

So they did something about it. They bought nine ALCO Century 628's... America's most powerful single-engine diesel-electric locomotives.

matic wheel slip control in the business. Better over-all weight distribution to reduce wear on wheels and brake shoes.

It's also the first locomotive that can be equipped with steam generator and dynamic brake while retaining a low front hood. Plus new removable radiator and engine hoods. New hinged engine compartment doors for fast access to all engine cylinders. Walk-in access to the main generator. All designed to cut maintenance costs and downtime.

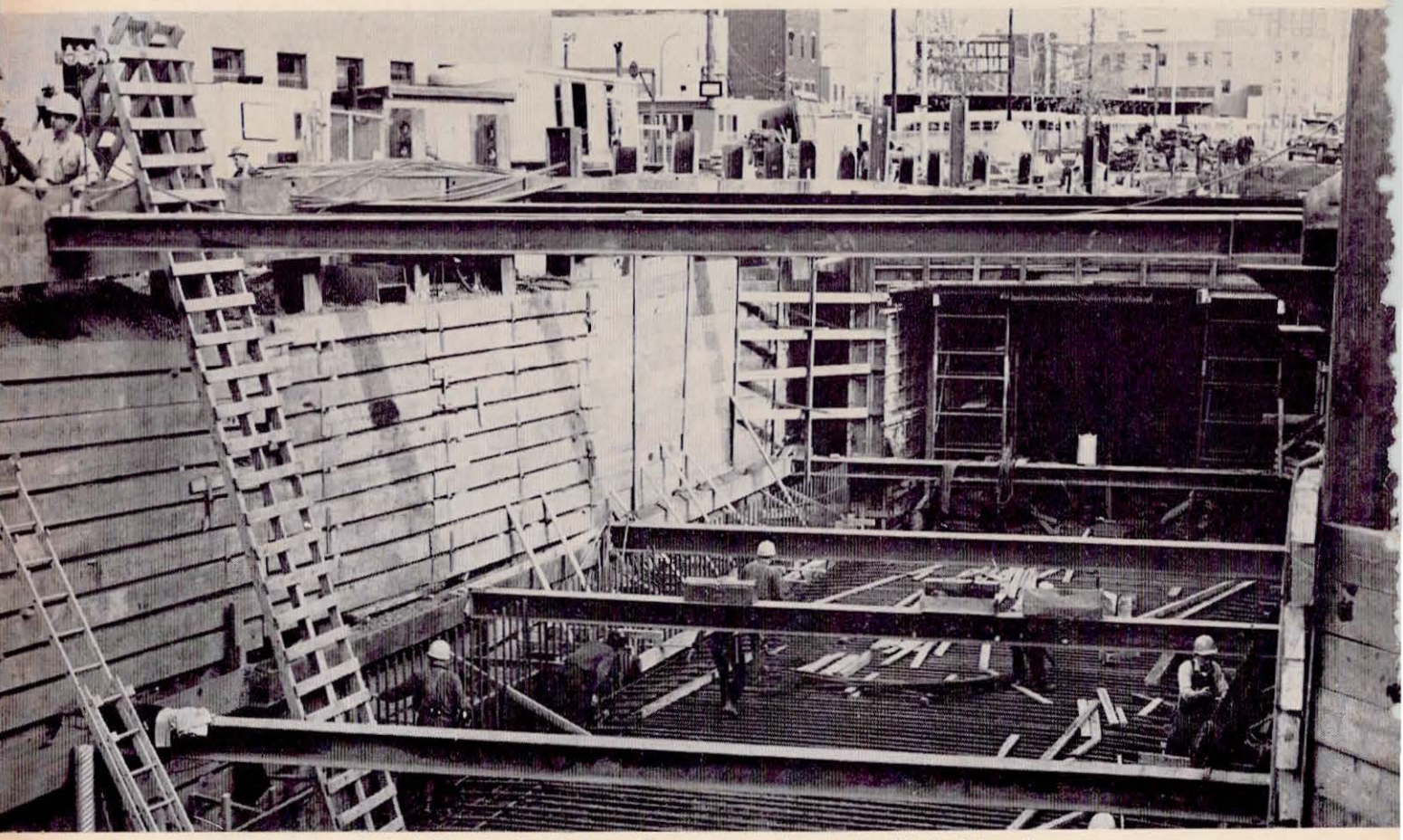
It all adds up to something big. More power. Lower operating costs. More ton-miles capacity. Greater profit.

Ask your ALCO man for the complete Century locomotive story: Century 855 ... 5,500 hp; Century 628 ... 2,750 hp; Century 424 ... 2,400 hp; Century 420 ... 2,000 hp. America's first full-range series of modern motive power.

ALCO

ALCO PRODUCTS, INC., 530 FIFTH AVENUE NEW YORK, N.Y., 10036

Montreal now has a full-size mock up of its car. Three motors and six trailers will make up a Metro train.



Tube construction has switched from hard-rock tunnelling to cut-and-cover on the first two lines.

MONTREAL'S METRO

Burrowing away on time

With two years of digging behind it, the 15.1-mile subway project is reported on schedule. A must date: 1967 World's Fair.

Two years ago construction began on the $180-million Montreal Metro subway system. Just over two years from now trains are scheduled to begin operating on the first two lines of North America's first rubber-tired subway. In 1967 a year later and just in time for the opening of Montreal's World's Fair, a third line will start running under the St. Lawrence River to the Fair site.

The 15.1 route-miles, all double track and all underground, will have been built in less than five years. Right now? "We're right on schedule," says Montreal Mayor Jean Drapeau.

● **No time wasted.** The subway, principal plank in Mayor Drapeau's 1960 reelection campaign platform, is being built by the Public Works Department of the City for operation by the Montreal Transportation Commission. And no time has been wasted.

According to L. L'Allier, director of the Public Works Department, contractors currently are at work at over a dozen different sites along the first two routes. More than five miles of tunnel have been completed. Orders have been placed for 369 cars. Construction of the car shop has been started and contracts for the right-of-way and stations are soon to be let.

While the past year has seen several changes in the routes of the system as it was envisioned when construction began two years ago, there never has been a wavering from the determination to pattern the underground transit system for Canada's largest city after Line 11 of the Paris Metro in France.

● **Rubber tire vehicles.** Montreal is probably more firmly wedded to this rubber-tire transit concept today than it was a year ago. Plans to take over and operate as a transit line the present electrified suburban route of the Canadian National serving the north side of Montreal island have been shelved indefinitely. In the place of this steel-wheels-on-steel-rails operation, which would have required a separate car fleet, authorization has been made for one of the original pair of rubber-tire lines to be extended two miles northward to the island's north shore.

● **World's Fair line.** More significant has been the authorization of a third, and completely new, rubber-tire line 2.7 miles in length, extending from the city center under the St. Lawrence to a station at St. Helens Island in mid-river and on to two more stations on the south shore. It is on St. Helens Island that the 1967 Canadian World Exhibition is to be located.

Decision to go French on its subway "was reached in good faith," according to Lucien Saulnier, chairman of the city executive committee. Among advantages cited by city officials are high wheel-rail adhesion, low noise level, high possible frequency of stops and starts, shorter intervals between trains, lighter cars, possible addition of trailers, ability to operate up steeper grades, and simplification of engineering works. Vigorous argument has been waged in Montreal and elsewhere over this transit concept.

Opponents have challenged everything from acceleration rate to the cost of steel vs rubber-tired wheels. But having made the decision, Montreal city officials have moved ahead resolutely. Engineers of Regie Autonome des Transport Parisiens (RATP), the French capital's transit body, are consultants to Montreal subway authorities.

● **Small cars-high speeds.** Cars smaller than those used on conventional transit lines but capable of operating at better over-all speeds are said to give Montreal Metro a passenger-carrying capacity equal, or greater than that of a standard double-track steel-wheel line. There seems to be no doubt that the 8-feet 3-inch wide, 11-feet 9-inch high cars have made possible a tunnel less expensive than would be required for operation of steel-wheel cars of the sizes being designed for other new transit lines today.

The five miles of hard-rock tunnelling for Lines 1 and 2, now virtually complete, has produced a concrete-lined single tube 26 feet wide and 16 feet high, with the shape of the classic basket-handle arch. Virtually all of this, 30 to 60 feet below the surface, has been produced much faster than was originally thought possible.

Contractors are now at work on the more difficult and time consuming cut-and-cover sections where tunnels will be just below the surface. It is estimated that the tunnel on the first two lines will be 53% cut-and-cover, 42% rock tunnel, and 5% tunnel in earth. In the cut-and-cover sections, all through soft soil, the tube takes the shape of a 28-foot-wide rectangular box.

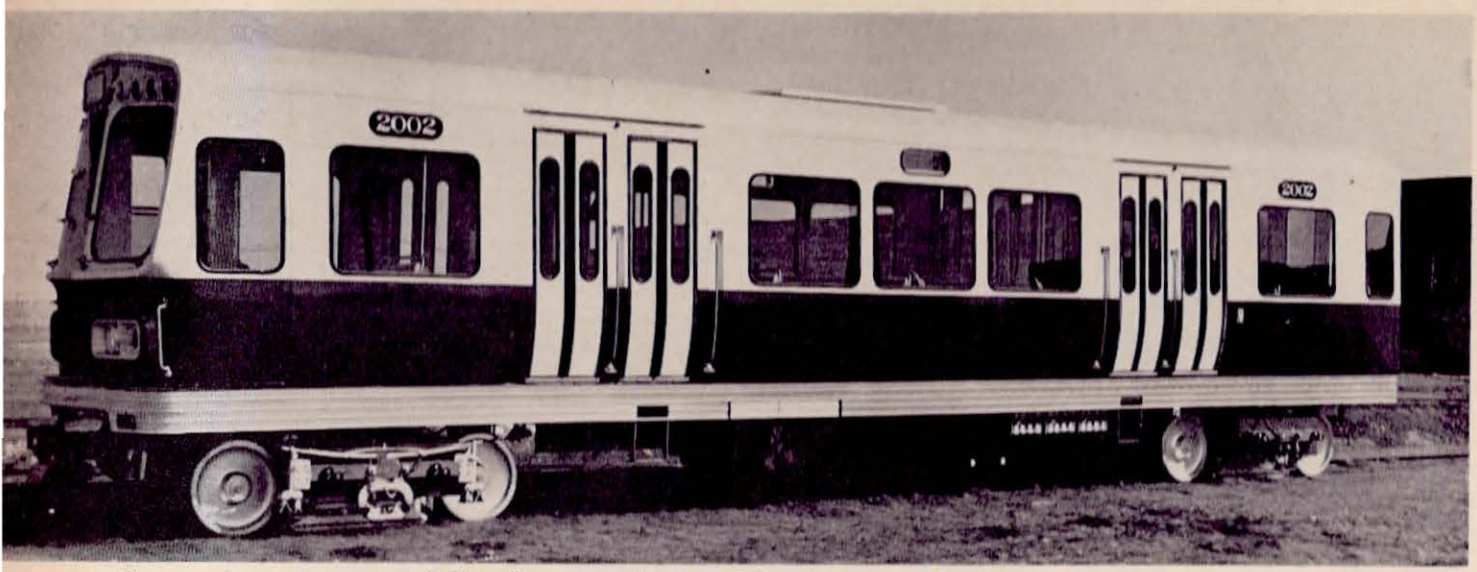
● **Double running surfaces.** The "track," construction of which will soon be started, consists of a pair of conventionally mounted steel rails on the outside of which are two running surfaces, on which the load-bearing rubber tires in the car trucks will bear. Outside of each of these concrete tire runways, and slightly higher, are a pair of steel guide bars against which the horizontal steering tires in the car trucks will bear.

These guidebars also serve as third rails, transmitting traction current to the cars. The conventional steel rails serve not only as a current return, but also as guides for the cars as they traverse switches and other track-work where the steering tires cannot function.

Inboard of each of the load-carrying tires is an auxiliary steel safety wheel which has an exceptionally high flange that will contact the conventional rails at switches and crossings. In event of a tire failure it would bear on the rail completely.

Delivery of the first car is to be made in the spring of 1965 from the Montreal plant of Canadian Vickers. Remainder of the $45-million order will be delivered over the following two years with all the rolling stock to be on line in time for the opening of the '67 Fair.

Canadian Vickers, a newcomer to carbuilding, is now putting up a 155,000 square-foot shop in which to assemble the 369 steel cars. A French organization, La Compagnie Industrielle de Matériel de Transport (CIMT), builder of the Paris Metro cars, is working with Vickers on rolling stock design. ■



The cars have a top speed of 65 mph, can accelerate at 3.2 mph per second.

P-S cars to score 'firsts' in Chicago

Among them: the generation of air-conditioned breezes for Windy City transit passengers.

Pullman-Standard delivered two "cool" cars to the Chicago Transit Authority last week. They were the first units of CTA's order for 180 air-conditioned rapid transit cars (RA, June 24, 1963) to come off P-S' production line.

CTA's new fleet (which will cost about $19 million) will roll into service with a whole list of "firsts." The cars represent:

—The first purchase of air-conditioned cars by a U.S. authority-type rapid transit system.

—The first transit cars using static inverters and static converters for light and control power.

—The first aluminum rapid transit car bodies with high-tensile-strength steel underframes built in the U.S.

Colored off-white and mint green (a new shade of green for CTA), the cars are going on display this week to give Chicagoans a preview of features which, says CTA, make them the most advanced rapid transit cars ever to run on Chicago's 2,000-plus miles of CTA routes.

Interiors of the cars are finished in melamine plastic, stainless steel and aluminum.

The cars have tinted glass picture windows, aluminum skirting, wide seats, newly designed trucks (CTA-1 trucks) equipped with steel-and-rubber springs and shock absorbers.

● **Plastic ends.** Additionally, the P-S CTA cars have full plastic car ends (riveted to the metal body) that represents the first production line use of such non-metal components. The cars also have back-lighted panels for color transparency advertising displays in fluorescent fixtures that will help the equipment's lighting system deliver 30 foot-candles of light at the reading level. Interiors are of plastic and stainless steel and are designed to facilitate quick and easy maintenance and cleaning.

The cars are equipped with a public address system, trainphones for two-way communication between trains and CTA's operations control in downtown Chicago, and with four 100-horsepower motors per car for high performance in conjunction with newly designed controllers for smooth acceleration and deceleration. The cars come equipped with three braking systems—motor, disc and track brakes.

● **Replace 200 old cars.** After a period during which CTA will process the cars in its shops and also train operating and shop personnel, the equipment will go into service on CTA's Lake route. About 148 of the cars will go into the Lake route service and the balance will be placed in service on CTA's Douglas branch. The air-conditioned cars will replace 200 units ranging in age from 40 to 50 years.

CTA is financing the cars from transit revenues. About $7.5 million has come from the sale of equipment trust certificates which will be serviced from CTA's depreciation reserves—as will the balance of the cost of the cars. CTA's depreciation reserves are accumulated by deposits from operating revenues—as required by the Metropolitan Transit Authority Act under which CTA operates. To date CTA has invested $188 million in equipment and facility modernization.

The 180 air-conditioned CTA cars will be delivered by P-S at the rate of 10 per week until the entire order is completed by late September. ■

Mass transit bill is gaining in Congress

Optimism is growing in transit industry circles as to chances for passage this session—perhaps this month—of H.R. 3881, the Mass Transit Bill. In spite of having passed the Senate last year, the bill was stymied in the House Rules Committee, mainly because House Democratic leaders doubted their ability to get a favorable vote on the bill, once it reached the floor of the House.

Two big factors in the present confidence about early passage are energetic White House support, and toning down of opposition in some quarters (notably organized labor groups). Another reason for transit men's optimism: ranking Republican leaders have indicated that there will be no Policy Committee position on the bill, one way or another. This leaves GOP members free to vote as they wish—and many have said unofficially that they will support the bill.

Floor manager of the bill is Rep. Albert Rains (D.-Ala.), with Rep. William Widnall (R.-N.J.) working to line up support on the other side of the aisle. At least three strategy meetings have been held at the White House to coordinate the campaign, and a number of unofficial headcounts taken. Supporters of H.R. 3881 now believe that they have enough votes—both in the Rules Committee and on the floor of the full House—to go ahead and schedule debate on the bill some time during the coming weeks.

Wide gauge transit

San Francisco Bay Area transit engineers have submitted a proposal for a wide gauge on trackage of the coming BARTD system. The recommendation grew out of technical studies made by Parson Brinckerhoff-Tudor-Bechtel, as well as data obtained from wind tunnel tests conducted by the Stanford Research Institute.

The present proposal calls for a width of five feet, six inches, rather than the standard gauge of four feet, eight and one half inches, and as such would be the widest gauge in use on a U.S. rail transit system.

Chief reason for adopting the wide gauge, according to BARTD officials, is greater stability—and therefore safety—of extremely lightweight cars moving at high speeds. Other benefits predicted are better riding qualities and lower operating costs due to reductions in electric power requirements.

In making the recommendation, the engineers were guided by a combination of special conditions: large segments of the BARTD system will be at surface grade or on aerial structures, and wind velocities in the Bay Area are high; cars will be lighter (800 pounds per linear foot); and operating speeds will sometimes approach 80 mph.

Darrell W. Halligan, Chief Equipment Engineer for the BARTD consultants, said that the decision to go to wide gauge was on the basis of "the most comprehensive study that has ever been made in this field."

Research took over a year, and included studies of wide-gauge systems in European cities, reviews of previous research elsewhere, and tests conducted by the Stanford Research Institute at Lockheed Aircraft's wind tunnel at Burbank, Calif.

Skokie line a hit

With passenger volume on the Skokie Swift line into Chicago far surpassing expectations, service on Saturday has been added on an experimental basis.

The new service operates every half hour, from 7:00 A.M. to 7:00 P.M., each Saturday through May 16.

Heavy weekday traffic volume on the revived, high-speed Skokie line (RA, April 6, p. 19) has delighted Chicago Transit Authority officials: according to Chairman George L. DeMent of the Chicago Transit Board, "On the first day of the Skokie Swift service, Monday, April 20, we carried a total of 4,045 passengers in the 16-hour period. This compares with approximately 1,600 riders carried by the North Shore to and from the Dempster terminal area in a 12-hour period just prior to its termination of operations."

Similar gains were reported on the following Tuesday and Wednesday.

Gains comparable to this might be too much to expect on a Saturday, but a substantial increase in patronage could certainly induce the CTA to retain the 6-day service on a permanent basis.

One unofficial report on the first Saturday's traffic listed the day's volume figure as about 2,000, compared with the old average of 800 riders. The Mayor of Skokie was reported to have lifted Saturday parking restrictions to accommodate the surprising turnout.

Stockholm subway grows

Transit system officials from all over the world were invited to Stockholm, Sweden last month for the dedication by King Gustav Adolf of the first big segment of a second subway system.

The newly-completed 7.4-mile segment is the first step toward filling a gap left by the city's previous 25-mile system: until now, 100,000 people in the southwestern portion of the Swedish capital lacked access by rapid transit to the central portion of the city.

When completed in 1967, the second line will be 15 miles long and have 24 stations.

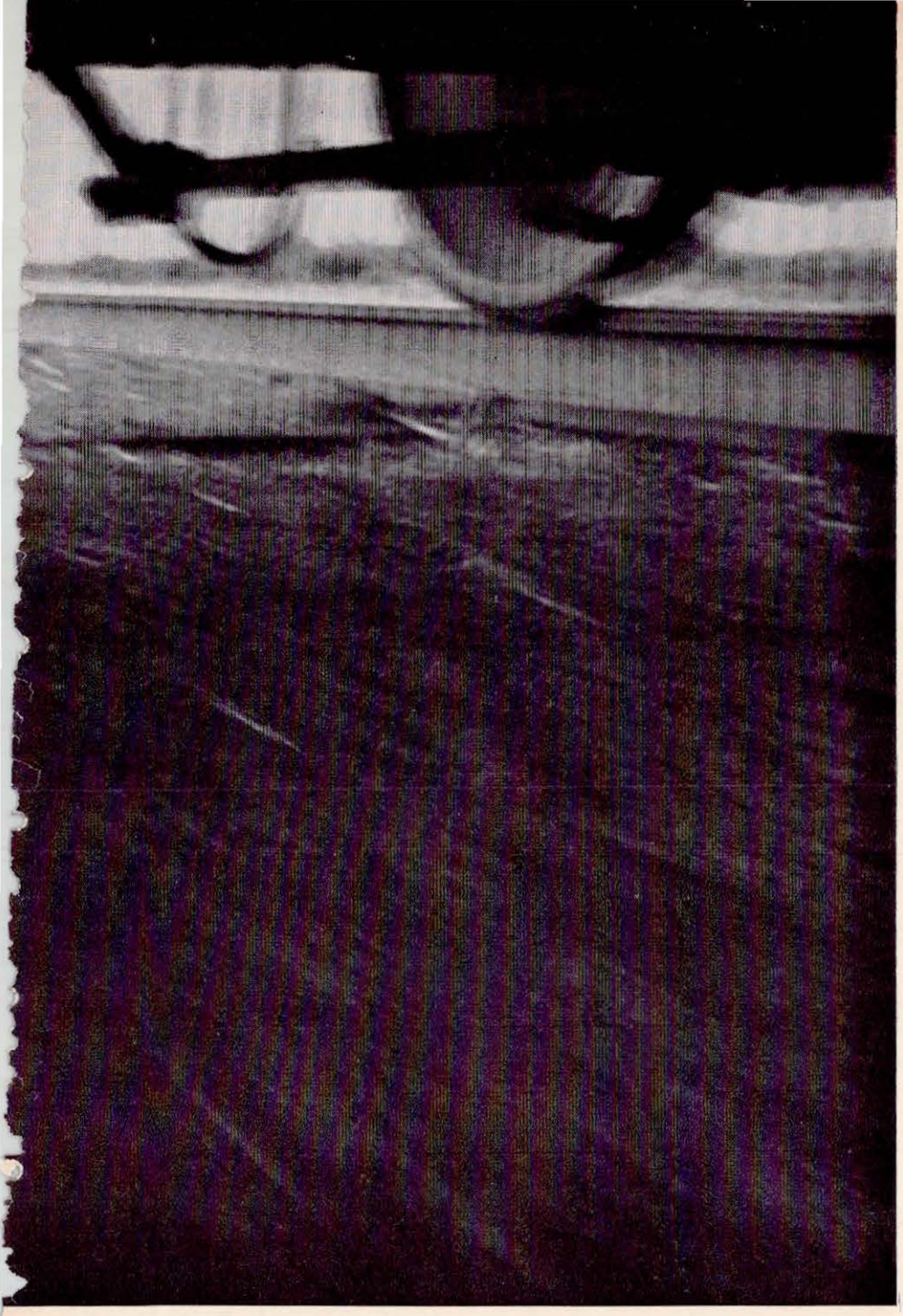
With large-scale area development scheduled in this sector of the city, it is expected that the new line will eventually serve 150,000 persons.

The first subway line in Stockholm was opened in 1950 in the southern part of the city. Two years later a western line was added, and in 1957 the two were connected by means of a downtown subway. Additional extensions and improvements were added through 1960, when the first subway system was considered to have reached its proper proportions.

Plans for starting a second system grew out of a situation as familiar in Stockholm as in most American cities—congested street traffic. Traffic has jumped 300% since 1950, when the first segment of the subway system was opened, and today there is about one car for every five persons—the highest ratio in Europe.

With a metropolitan population of 1.2 million and the fact that the city is constructed Venice-like on a series of islands, additional transit facilities became a must.

Wear is a problem:



Hi-Si® rail is a solution

An economical solution, particularly on curves, grades, and where wheel loads are known to be excessive.

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But CF&I Hi-Si Rail makes another difference, too. Longer continuous operating life means lower maintenance, lower repair and lower labor costs. Even the initial cost of the rail is an economy when Hi-Si's greatly increased wear characteristics are considered.

Hi-Si Rail is another example of improved rail developed by CF&I in cooperation with the railroad industry. The Colorado Fuel and Iron Corporation, Denver, Colorado. D-274

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CF&I STEEL

LETTERS

Turbine-powered trains

Richmond, Va.

To the Editor:

Your article "New Demands, New Designs" in the April 6 issue of Railway Age was most interesting, but the portions relating of the TMT-9 train design require some clarification.

The TMT-9 proposal is a turbine-powered version of the DMT series trains which I designed in 1956-7 when I was director of design for the Chesapeake & Ohio. The concept was presented in 1957 to the RSPA (now Railway Systems & Management Association) in a paper entitled "Design for Utilization."

In April 1961, I gave a paper to the RSMA entitled "Is Transit Expensive?" which first suggested turbo-electric propulsion for non-electrified suburban lines. This was considerably expanded upon in December 1962, in another paper given to the American Transportation Research Forum in Pittsburgh.

The TMT-9 proposal which I prepared in December 1963, while serving as market manager, metropolitan transportation and containerization systems for Reynolds Metals Company, is basically the same medium distance train designed in 1956 except that, today, turbo-electric propulsion can be effectively utilized. It is, actually, only one of a family of turbine-powered motor trains. While it is intended to seat 360 passengers in luxury, the TMT-9c can seat up to 666 in the same length vehicle for dual purpose service. Obviously, the costs per seat mile would be drastically reduced even over the basic TMT-9.

This particular concept was utilized to stimulate the use of lightweight construction—which is a "must" with turbine power, but no proprietary rights or patents relating to the design and details of the particular type motor trains described belong to the Reynolds Metals Company.

Alan R. Cripe

In-motion weighing

Northfield, Ill.

To the Editor:

I have read with great interest both your article "Weighing cars on the run," in the March 9 issue of Railway Age, and the comments of E. T. Hurley, chief of technical research of the Canadian National, in his letter to the editor in the April 13 issue. The progress reflected in this field by Mr. Hurley's letter should be most gratifying to everybody concerned with railroading, since the scale is really the "cash register" for carrier and shipper alike.

We were slightly dismayed at the general statement that fast, in-motion weighing scales available on the market were not accurate enough for the requirements of the Canadian National. Since the Railweight scale, the system produced by our company, has been available for some time, and since no investigation of the system has been made by the Canadian National, the comment might well be misconstrued.

We assume that the testing referred to by Mr. Hurley involved approved tests utilizing scale cars of known weight. Any other measurements as fine as those indicated would be unrealistic since they would reflect only deviations in weight from a standard determined on some other scale with a tolerance for error exceeding the maximum errors found in that test.

Under the same approved testing techniques, with tests concluded by the U. S. Bureau of Standards, of two Railweight installations, one reflected a maximum deviation of 20 lb in 80,000 (0.025%) and of 20 lb in 40,000 (0.05%). The subsequent test of the same unit reflected 50 lb deviation at 80,000 lb. Another unit, in use commercially every day, reflected a maximum 50-lb deviation with a 40,000-lb test (0.125%) and a 20-lb deviation in a 80,000 test load (0.025%).

These are inclusive errors from minimum "print-out" increments. In the case of Railweight each 10-lb increment is recorded and printed. To the best of our knowledge no other automatic scale, weighing cars either coupled or uncoupled, is capable of measurements and records of increments so "fine."

S. H. Levinson
President
International Railroads' Weighing Corp.

Railroad efficiency

Pittsburgh

To the Editor:

The Special Report covering the efficiency of railroads as a form of transport, which appeared in Railway Age, April 13, 1964, is a particularly effective report. Our compliments to Railway Age on a very fine job. . . .

J. J. Carlin
Supervisor of Education and Training
The Monongahela Connecting Railroad Company, Aliquippa and Southern Railroad Company, The Cuyahoga Valley Railway Company.

[Other readers shared Mr. Carlin's enthusiasm for the Special Report entitled, "Why railroads are incomparably the world's most efficient form of transportation." Several thousand reprints have been ordered and will soon be ready for distribution. For reprint information, see page 32.—Editor.]

C&NW riders pay their way

(Continued from page 21)

there have been factors that have had a disruptive effect. Before the expressways were built we had a pattern of steady growth; this reversed itself as soon as the expressways were opened to the public. Another adverse effect was the 30-day strike in 1962 which caused us to lose more commuters than we could afford. On the other hand, the North Shore abandonment had a strong positive effect on our passenger load, and, of course, we are convinced the quality of our present service is a major factor in bringing new riders to us.

Q. Do you feel that government's increasing role in metropolitan transportation is justified?

A. I think so—where people were not being given adequate service in the beginning.

In our case, however, I do not agree with government aid to any form of mass transit which would permit expansion into our territory where we are providing adequate service. We think we have some of the finest suburban service in the world and we feel that the government cannot justify establishing competitive service into areas where we are already serving the public.

We also disagree with the efforts of Chicago Transit Authority to secure money to expand in the median strip of the Northwest Expressway into communities that we now provide with what we think is excellent service. We opposed that and we will oppose it again. In the commuter territory served by the North Western we don't think there is any need to provide government help.

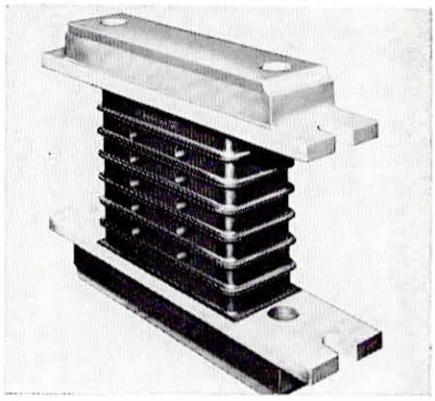
Q. Mr. Fitzpatrick, do you have any suggestions how transportation facilities can be rationalized to prevent duplication and waste in a large metropolitan center like Chicago?

A. I am not sure that it can be accomplished—short of establishing an agency charged with the task. We have attempted to work out some coordination with other forms of mass transit in Chicago and into the suburbs. We haven't achieved all we would like in the way of a coordinated operation. We have made many suggestions which, from our point of view, appear practical. Because of the many interests involved—commuter railroads, CTA, buses, highway people and the general public—I think it would take something in the nature of a commission with considerable authority. ■

NEW PRODUCTS REPORT

Jib Crane (RA-1)

The TM Series full hydraulic truck cranes now feature an automatic Stow-away jib. This, together with hydraulic outriggers, is said to materially decrease set-up and get-away time. Outriggers have independent power control of horizontal beams and vertical jacks. Other crane features are positive finger-tip control of all operations and two- or three-section "all power" hydraulic telescoping booms (360 deg). *Grove Manufacturing Co.*



Motor Mounting (RA-2)

Clearance and alignment problems met when inserting earlier model mountings between traction motor and truck bolster have been eliminated in the new elastomeric traction-motor-nose supports for road and switching locomotives. Manufacturer also says modified design increases stability under precompression loading during installation and eliminates buckling tendency due to uneven force exerted by preload bolts. *Lord Manufacturing Co.*

Epoxy Floor (RA-3)

Amazite topping can be spread, indoors or out, over rough, rutted, pitted or corroded concrete, wood or metal. According to manufacturer, maintenance men can do a perfect job with little or no interference with normal plant operations at one-third the labor cost of other methods. The self-leveling material is ready for service overnight. A ⅛-in. layer is said to outlast 2 in. of concrete under heaviest trucking or foot traffic. *Hallemite Mfg. Co.*

Journal-Box Seals (RA-4)

Neoprene rubber in Diamond seals for front and rear of journal boxes has been effectively tested for over five years on cars subjected to extreme weather. Rubber of rear seal around dust guard seat is on leather-fiber backing. Mitered corners of each L-shaped segment of Diamond lid seal will seal two of the four edges of box opening. After cleaning inside sealing surfaces of box lid, a pair of segments can be applied with adhesive. *Canadian Bronze.*

Fuel Gas (RA-5)

Mapp gas, a stabilized methylacetylene propadine, is said to combine high heat characteristics of acetylene with the handling safety of propane. Reductions in labor, fuel and handling costs are cited as factors that have caused plants to convert from natural gas, acetylene and propane to Mapp gas for cutting operations. In three-year field tests, cutting speeds with the liquefied gas are said to have exceeded those of other gases. *Dow Chemical Co.*

Industrial Coating (RA-6)

After removing excess oil, water, loose dirt and scale, Garlock 510 enamel can be applied to raw or previously painted surfaces with standard brush or spray equipment. Neither complete degreasing nor special preparation is required; coating can be applied directly to irremovable rust on external or internal surfaces. The enamel dries to a glass in less than 20 minutes, the manufacturer says. Eight standard colors are available. *Garlock.*

PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS ADVERTISED ON PAGES 2 3 4 6 9 10 13 22-23 28-29 35 39 40A 40B 43 44

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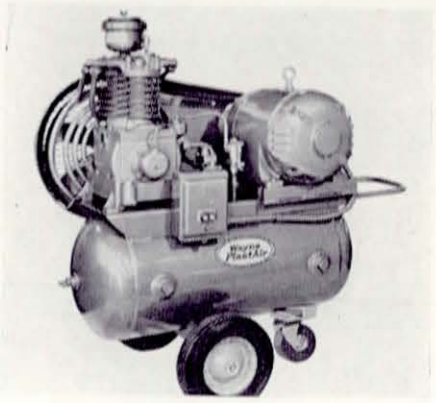
NEW PRODUCTS REPORT



Air Compressors (RA-7)

Portability and the delivery of high volumes of air are said to be the principal advantages of a new compressor series designed for large scale painting and wall-plastering operations. Start-stop controllers of electrically powered units are push-button operated. Gas-engine units have manual or electric starters. The horsepower of the latter ranges from 7.2 to 13.6. Air delivery is 46 cfm. Compressors all have discharge unloaders. *Wayne Pump Co.*

Cut-Off Gates (RA-8)

Cut-off of rolling blade gate, a device for bin and hopper bottoms, and for bagging, batch weighing and flow-control operations, is said to be 100%, with no leakage. Opening is effected by an air-powered, rolling-diaphragm cylinder operating on 30 to 40 psi air pressure. Closing is performed by return spring in conjunction with force of flowing materials. Standard inside throat openings are 6, 8, 10, 12, 14 and 16 in. *Cleveland Armstrong Corp.*

New Literature

The MacGREGOR ROOF. This 12-page booklet from Railroad Supply & Equipment, Inc., contains a résumé of the development of a self-contained, one-man-operated full opening roof for freight cars. Line drawings show the basic design and function of the MacGregor roof. (NL-1)

MULTI-PURPOSE VALVES. Aurora Corp.'s Power Division announces its joy-stick-type valve is available for railroad equipment applications. The valve comes in two sizes for both pneumatic and hydraulic service and is being used on tie-setting equipment where two cylinders must be operated in combination with one manual level. (NL-2)

MIDGET AIR DRILLS. A 6-page folder announcing Ingersoll-Rand Co.'s new line of 47 midget drills for drilling small holes. Step-by-step instructions for drill selection are included. (NL-3)

FORCE MEASUREMENT. A new W.C. Dillon bulletin fully describes how to set precise tension in cables, chains and wires. Illustrated with photographs showing typical applications in various industries, including railroads. (NL-4)

SPECIAL APPLICATION WELDING. A new bulletin issued by TWECO Products, Inc., covers special application welding equipment and materials used in arc welding. All items in the bulletin provide greater efficiency and solve troublesome problems for users of arc welding. (NL-5)

PERSONNEL CARRIER. A new one-man personnel carrier which can be folded down to fit into an automobile trunk has been announced by Porta-Karts Unlimited, Inc. The carrier weighs only 120 pounds, but will carry and tow up to five times its weight up and down 25-deg. grades. (NL-6)

RUST PREVENTIVES. Shell Oil Co.'s new technical bulletin discusses the causes of corrosion of such metals as steel, aluminum and magnesium, copper, zinc and nickel and the basic considerations governing selection of the proper rust preventive product. (NL-7)

INTERIOR TANK CLEANING. This Oakite Products service bulletin describes a new lightweight interior tank cleaning unit easily handled by one man. (NL-8)

INTEGRAL HP A-C MOTORS. A new 32-page booklet describing integral horsepower a-c motors built on NEMA frame 143 through 445 U has been issued by Westinghouse Motor and Gearing Division. (NL-9)

CABLE CARRIER. Lynch Communication Systems Inc. announces a new 8-page brochure describing the new transistorized N2-type cable carrier. (NL-10)

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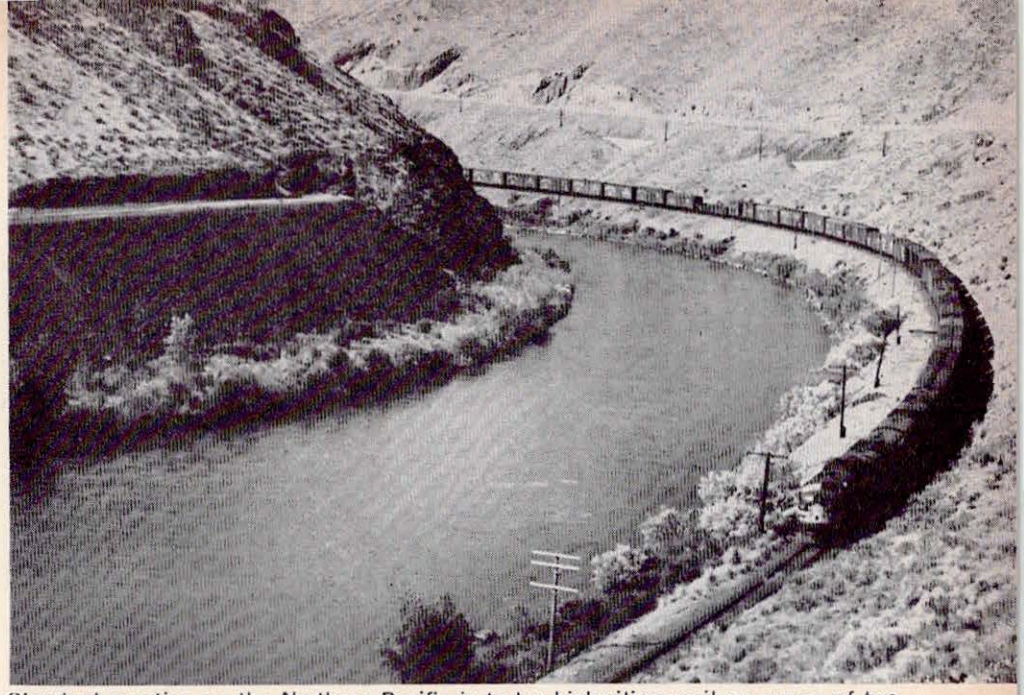
5/4/64

Hi-Si rail pays its way on the NP

Longer life, especially on main-line curves, justifies the higher cost of high-silicon-content rail.



Standard practice on the Northern Pacific is to lay high-silicon rail on curves of two degrees and over. This view was taken along the Yakima River in Washington.

"In my opinion," says D. H. Shoemaker, the Northern Pacific's chief engineer, "we are realizing an attractive return on the additional investment we are making in high-silicon rail."

What Mr. Shoemaker was saying, in other words, is that the longer life of high-silicon rail on sharper main-line curves amply justifies the premium price of $10 per ton the NP pays for the rail.

● **Eight years—34,000 tons.** The Northern Pacific began using high-silicon rail on curves in 1956. Since then it has been buying such rail in varying quantities each year. By the end of 1964 the road will have laid about 34,000 tons of the rail in 147 miles of track.

Although not enough time has elapsed to make many direct comparisons, the road is convinced, from the performance of high-silicon rail to date, that it will obtain twice the service life from this rail that it would from standard rails laid in the same location.

● **Started with AREA report.** NP's decision to begin using high-silicon rail stemmed from a favorable report submitted to the American Railway Engineering Association in 1956 by the association's Committee No. 4—Rail. A portion of the report dealt with shelly-rail studies made at the University of Illinois. In this section it was stated that nine specimens of high-silicon rail withstood 1½ to 2 times the number of cycles under rolling-load tests. The conclusion was that this performance indicated a stronger rail that should give greater resistance to shelling and also give considerably more resistance to curve wear on the high rail and to flow of the low rail.

To the NP this promise of longer service life seemed worth exploring further. Accordingly, it placed an order with the Colorado Fuel & Iron Corp. for 1,500 tons of high-silicon rail and laid it on 6.46 track-miles of curved track, mostly in mountainous territory, in 1956.

● **What is Hi-Si rail?** As manufactured by CF&I, high-silicon rail is known as Hi-Si rail and is patented. It is made from steel containing a higher amount of silicon than conventional carbon-steel rail. The normal percentage of silicon in carbon-steel rail ranges from 0.10% to 0.23%. In high-silicon rail the range is from 0.50% to 1.00%. Actually, the objective is to maintain a consistently uniform silicon content at about the midpoint of this range.

The Brinell hardness of Hi-Si rail is said to lie between 290 and 310. This represents a gain of 30 to 45 points, compared with carbon-steel rail. In addition to being harder than conventionel carbon-steel rail, CF&I reports, Hi-Si rail is tougher. Its manufacture presents no problems in the use of basic-oxygen steel, the manufacturer states. As for weldability, the Northern Pacific reports that Hi-Si rail presents no problems when it is being welded into continuous lengths.

● **Used by others.** Other roads besides the Northern Pacific are users of Hi-Si rail. Several of them have installed, or have programmed installations of, Hi-Si rail in quantities beyond those necessary for test evaluation, according to the manufacturer. These roads include the Southern Pacific, Santa Fe, Union Pacific, Western Pacific, Denver & Rio Grande Western and Spokane, Portland & Seattle. Test installations are under observation on the Great Northern and the Rock Island. Copper-mining companies in the Western part of the country, all of which have considerable amounts of mine trackage subject to heavily laden ore cars, are reported to be extensive users of the rail.

Based on its experience with Hi-Si rail, the NP in 1957 incorporated rail of this type into its new-rail standards for laying in certain locations. Present NP standard practice is to lay new 115-pound continuous-welded standard carbon-steel rails in its main-line tangent tracks and on curves up to 2 degrees; 132-pound continuous-welded high-silicon rail on curves over 2 degrees and up to 5 degrees 30 minutes; and 132-pound high-silicon rail in standard 39-foot lengths on curves over 5 degrees 30 minutes.

An exception to the practice of laying 115-pound rail on tangents is made for the track between Seattle, Wash., and Portland, Ore. This trackage has a high traffic density. Because of the greater tonnage handled, it is classified by the NP as 132-pound new-rail territory, and the rail on tangents and curves up to 5 degrees and 30 minutes is welded.

● **Plans for 1964.** In 1964, the road plans to lay 28 miles of 132-pound Hi-Si rail out-of-face between Seattle and Tacoma. This will be the first time it has laid high-silicon rail out-of-face on tangent track. It is felt that its use on such track can be economically justified because of the heavy traffic carried at high speeds over the line, where joint batter has been a problem.

Because of its practice of programming laying of new rail on curves, the NP has maintained a good record of the service life of rail on all curves. The record shows that no installations of high-silicon rail have been disturbed, except on an 8 degree curve in the Cascade Mountains near Stampede, Wash. Both the high and low sides of the curve had been laid with high-

RAILROADING AFTER HOURS WITH JIM LYNE

TIMELY PREMONITION—A long while ago my friend Loyd Kiernan (IC, AAR, B&M—now retired) was secretary to the general superintendent of the Y&MV. They went to New Orleans in the boss' business car and were lined up to spend the night there, to leave the next day for Memphis. The boss told Loyd to take the afternoon off—which he did with alacrity, since a private secretary doesn't often get such a break. Loyd went to a movie, but right in the middle of the feature he got an urgent feeling of uneasiness that propelled him quickly down to the station.

LYNE

He didn't get there any too soon. The yard people had the business car all lined up to leave town around 6 p.m. that same day, which would have stranded its occupants—and Loyd said the boss was "not given to encouraging mistakes" of this kind.

Except for this premonition (whether it was coincidence or indigestion or whatever), Loyd's long and interesting railroad career might have run into a little rather rough weather. He still remembers the compulsion he felt to get back to the car that afternoon as uniquely strong. Nothing like it ever happened to him before or since.

WHEN THE BOSS WAS BOSS—I recall an instance in my youth when a general manager's business car was derailed. There were no casualties—except the roadmaster, who was fired, apparently because in those days, on that particular railroad, if there was a derailment involving a business car, it was standard practice that somebody got the gate. The superintendent who told me about the case was distressed about it, saying he, or the general manager himself, were as much to blame for the broken rail that caused the derailment as the roadmaster was.

The other swing of the pendulum, of course, is an instance where a fellow obviously at fault cannot be canned. Excessive swings of the pendulum—reckless severity to equally reckless leniency—are both off of the target of sound management, I'd suppose. Some poor fellow a generation ago took the rap that has resulted in leniency toward a present-day scalawag. Laxity today may build up tomorrow's severity. Late trains in Italy were a prelude to Mussolini.

NO BARRIERS TO LEARNING—The career of the late dean of transportation teachers, Professor W. J. Cunningham, stands as a challenge to all young men who regret that they "never had the opportunity to get an education." Born at St. John, N.B., his formal schooling went no further than the grades, which he left at age 13.

While working in a dry goods store, he taught himself stenography and typing (on a dummy keyboard that he built himself). He then got a stenographer's job on the Canadian Pacific, later moving to the B&M at Boston. All the time he was studying, studying—at night school and by correspondence; and while still quite young he served as assistant to president of the New Haven and then of the B&M. Meantime, he started lecturing on transportation at Harvard, and held the James J. Hill chair of transportation there for over 30 years.

I knew the Professor well—but not as many interesting details of his inspiring career as are recorded in the March 1963 issue of the Harvard Business School Bulletin by his former secretary, Catherine Harris. I'm thankful to PRR's Zech Chafee for calling the piece to my attention and to Managing Editor Elinor Perry for sending me a copy.

The Professor not only imparted knowledge and inspiration to several generations of students—among them my editorial colleagues, Walter Taft and Gardner Hudson—he also entertained them by a steady flow of ancedotes, and tales of amusing (and occasionally embarrassing) experiences. Such as the time on a motor trip, when he stopped for gas and drove away in absentminded professor style, not noticing that his wife, who had left the car when it stopped, was no longer with him.

An academic degree is a handy label, to signify the attainment of a certain amount of erudition—but there are a lot of containers of huge quantities of learning who display no sign to that effect. And Prof. Cunningham was preeminent among them.

silicon rail in 1956. Being on a 2.2% grade, rail on the curve is subject to heavy sanding which results in rapid wear of the high rail. The rail on the low side remained in good fullball condition except for some slight top wear. By 1962, however, the road felt the high rail had reached a condition in which, if not transposed soon, it would be uneconomical to do so.

The dependence NP is now placing on Hi-Si rail is indicated by the plans it has made this year for a 9-degree 36-minute curve near Little Falls, Minn. The rail on the high side is 132-pound Hi-Si rail laid in 1956; that on the low side is 132-pound carbon-steel rail rolled in 1952 but set over from the high side in 1956.

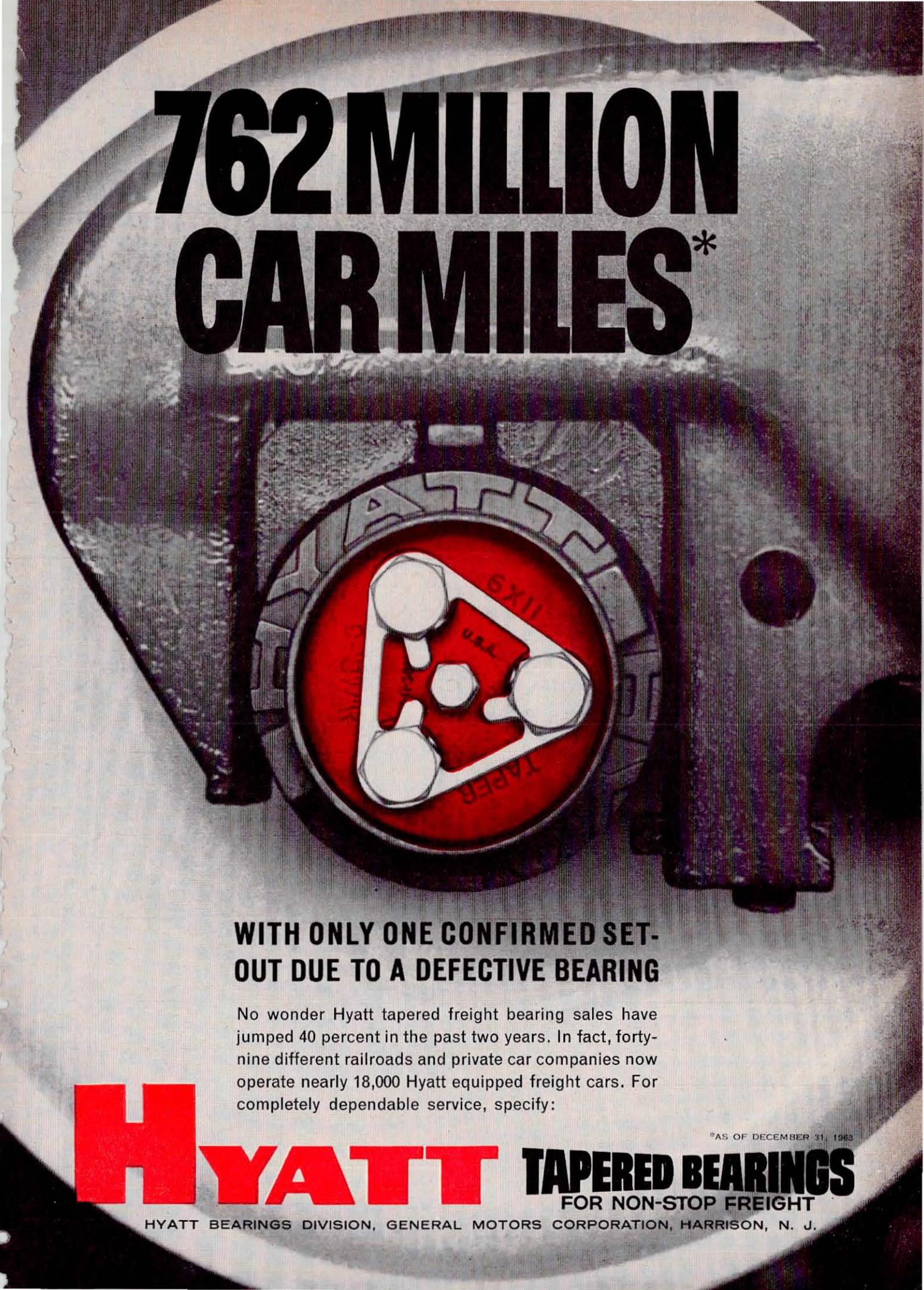
An inspection of rails on this curve showed the Hi-Si rail to have medium-light wear and the joints to be in good condition. The low rail, on the other hand, showed medium to heavy batter with some joints chipping, heavy corrugation throughout the curve and the ball flat from flow and thin from head wear. To correct the poor condition of the low rail, the road plans to relay the high rail with new 132-pound Hi-Si rail, shift the present Hi-Si high rail to the low side.

● **What the record shows.** Although the first high-silicon rail received by the NP was laid only eight years ago, the record reveals that such rail already has exceeded the performance of rail laid previously on many curves. One case in point is a 10-degree curve in the Cascade Mountains, the history of which is as follows.

1933—Laid 132-pound rail on high side and moved high rail to low side.
1937—Laid 131-pound rail on high side and moved high rail to low side.
1942—Laid 131-pound rail on high side and moved high rail to low side.
1947—Laid 131-pound rail on low side only.
1950—Laid 132-pound rail on high side and moved high rail to low side.
1953—Laid 132-pound rail on high side and moved high rail to low side.
1957—Laid 132-pound Hi-Si rail on high side, moved high rail to low side.

No rail has been laid on this curve since 1957.

● **'Twice the service life.'** "With Hi-Si rail we are experiencing better joint conditions, as we don't get battered rail ends," says S. H. Barlow, NP's system engineer-track. "We confidently expect that Hi-Si rail will give us twice the service life as carbon-steel rail. We have already experienced better than twice the service life on some sharp curves where we have saved not only the base price per net ton for rail but also the cost of labor that would have been required to lay it." ■



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MARKET OUTLOOK

Carloadings Slip

Loadings of revenue freight in the week ended April 25 totaled 571,971 cars, the Association of American Railroads announced on April 30. This was a decrease of 9,156 cars, or 1.6%, compared with the previous week; a decrease of 5,053 cars, or 0.9%, compared with the corresponding week last year; and a decrease of 5,894 cars, or 1.0%, compared with the equivalent 1962 week. Ton-miles generated by carloadings in the week ended April 25 are estimated at 12.6 billion, an increase of 2.5% over the corresponding week of 1963, and an increase of 7.6% over the 1962 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Apr. 25

District	1964	1963	1962
Eastern	81,198	82,542	81,316
Allegheny	99,137	100,576	95,277
Pocahontas	54,115	56,133	53,151
Southern	114,853	117,851	114,814
Northwestern	70,114	65,081	76,540
Central Western	114,224	114,605	116,808
Southwestern	38,330	40,236	39,959
Total Western Districts	222,668	219,922	233,307
Total All Roads	571,971	577,024	577,865
Commodities:			
Grain and grain products	46,263	53,651	50,763
Livestock	2,714	3,574	4,014
Coal	107,784	110,759	103,853
Coke	9,218	8,252	7,427
Forest Products	38,775	35,961	37,391
Ore	34,746	25,568	36,585
Merchandise	13,388	17,925	24,135
Miscellaneous	319,083	321,334	313,697
April 25	571,971	577,024	577,865
April 18	581,127	561,261	569,493
April 11	529,618	556,081	554,866
April 4	519,494	546,021	547,674
Mar. 28	528,157	558,013	565,098
Cumulative total, 17 weeks	8,996,618	8,839,499	9,151,960
Estimated revenue ton-miles (millions) 17 weeks	203,400	192,300	189,700

PIGGYBACK CARLOADING — U. S. piggyback loadings for the week ended April 18 totaled 17,160 cars, compared with 15,192 for the corresponding 1963 week. Loadings for 1964 up to April 18 totaled 255,133 cars, compared with 233,242 for the corresponding period of 1963.

IN CANADA — Carloadings for the seven-day period ended April 14 totaled 70,862 cars, compared with 72,076* for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
April 14, 1964	70,862	24,400
April 14, 1963	54,374	21,897
Cumulative Totals		
April 14, 1964	1,023,569	377,372
April 14, 1963	885,277	335,086

*Corrected

FREIGHT-TRAIN CARS

► *Atlantic Coast Line.*—Ordered 125 70-ton bulkhead flat cars and 200 70-ton-50-ft pulpwood rack cars from General Steel Industries, at a cost of about $5 million. All cars will incorporate one-piece cast steel underframes and interlocking bulkhead ends, and delivery will begin in October and be completed in May 1965.

► *Detroit & Mackinac.*—Leased 50 50-ton-capacity, 50½-ft double-door box cars from United States Railway Equipment for delivery during third quarter 1964.

► *New York Central.*—Ordered 150 box cars for two subsidiaries. The Peoria & Eastern ordered 100 50-ton 50½-ft steel box cars from Pullman-Standard, with delivery scheduled to start in September. Merchants Despatch is building 50 70-ton 50½-ft steel box cars equipped with cushion underframes. Delivery begins immediately.

► *Santa Fe.*—Ordered 116 rack cars (112 tri-level and 4 bi-level) from its Topeka, Kans., shops for delivery during second and third quarters 1964. The road also ordered 200 70-ton-capacity, 53½-ft, roller-bearing-equipped flat cars for wall-board traffic from Topeka. Delivery is scheduled for the fourth quarter.

► *Soo Line.*—Ordered 291 freight cars, of which 200 50-ft, 70-ton box cars will be built in its Fond du Lac, Wis., shops at a cost of $3 million. Cars will be equipped with roller bearings and hydraulic cushioning devices, and delivery will begin in September. Soo also ordered 50 100-ton covered hopper cars with longitudinal loading hatches from Pullman-Standard; 17 100-ton covered gondolas equipped with cushion underframes and roller bearings from Ortner; 14 60-ft, 70-ton flat cars equipped with roller bearings and special tie-down mechanisms for tractor loading from Thrall and 10 100-ton Airslide covered hopper cars from General American. All cars are scheduled for third and fourth quarter delivery.

PURCHASES

► *January Purchases Up 15.4%.*—Purchases by domestic railroads of fuel, material and supplies in the first month of this year were $17,023,000, or 15.4% higher than in the corresponding month of 1963. Purchases and inventory estimates in following tables were prepared by Railway Age.

	January 1964 (000)	January 1963 (000)
PURCHASES*		
Rail	$ 5,491	$ 3,347
Crossties	3,713	3,518
Other Material	84,457	72,382
Fuel	33,917	31,308
Total	$127,578	$110,555

*Subject to revision

	January 1, 1964 (000)	January 1, 1963 (000)
INVENTORIES*†		
Rail	$ 29,504	$ 39,316
Crossties	54,730	63,361
Other Material	318,557	321,643
Scrap	23,083	24,940
Fuel	21,930	23,706
Total	$447,804	$472,966

*Subject to revision.
†All total inventory figures taken from ICC statement Q-125 for month indicated.

YOU OUGHT TO KNOW

New Trucking regulations: The ICC has issued special rules of procedure under which irregular-route truckers may get certificates authorizing regular-route operations. The new rules, issued in No. MC-C-4366, will be in effect until March 1, 1965. They are designed to resolve the problem created by the tendency of irregular-route operations to gravitate toward regular-route services which are unlawful in the absence of certificates authorizing them. The Commission's order contemplates that irregular-route truckers will apply for conversion if any of their operations have evolved into regular-route services.

March fines: Twenty-six railroads paid fines totaling $42,850 in March for 171 violations of the Safety Appliance, Hours of Service, Signal Inspection, Locomotive Inspection and Explosives and Combustibles acts. Biggest payers, according to ICC were: Southern Pacific, $10,600; New York Central, $4,000; Baltimore & Ohio, $3,000.

Transit builder named: The San Francisco Bay Area Rapid Transit District has appointed Edward W. Peterson to manage construction of the 75-mile system. Mr. Peterson is a veteran engineer with more than 20 years of experience in heavy construction. Associated with the Bechtel Corp., he has held top supervisory positions on numerous large hydro-electric and pipeline projects throughout California, Oregon and Canada. He will head up the construction division assembled by the Transit District's consultants, Parsons Brinckerhoff-Tudor-Bechtel.

High praise for LBJ: C&O Vice Chairman Walter J. Tuohy expressed "great admiration" for President Johnson's handling of carrier-op negotiations, during last month's rail crisis. As Mr. Tuohy put it, "While some may say the price is high, what is high? Price is always relative. What looks high today, can look low tomorrow. . . . cooperation of people now becomes the hallmark of this industry."

Railroads and the military: Biggest joint military maneuvers of 1964 will be conducted May 17-30 in California, Arizona and Nevada—and railroads, as usual, will play a major role in solving logistical problems of the training exercises (named Desert Strike). More than 100,000 U.S. Army and U.S. Air Force personnel will participate in the operation.

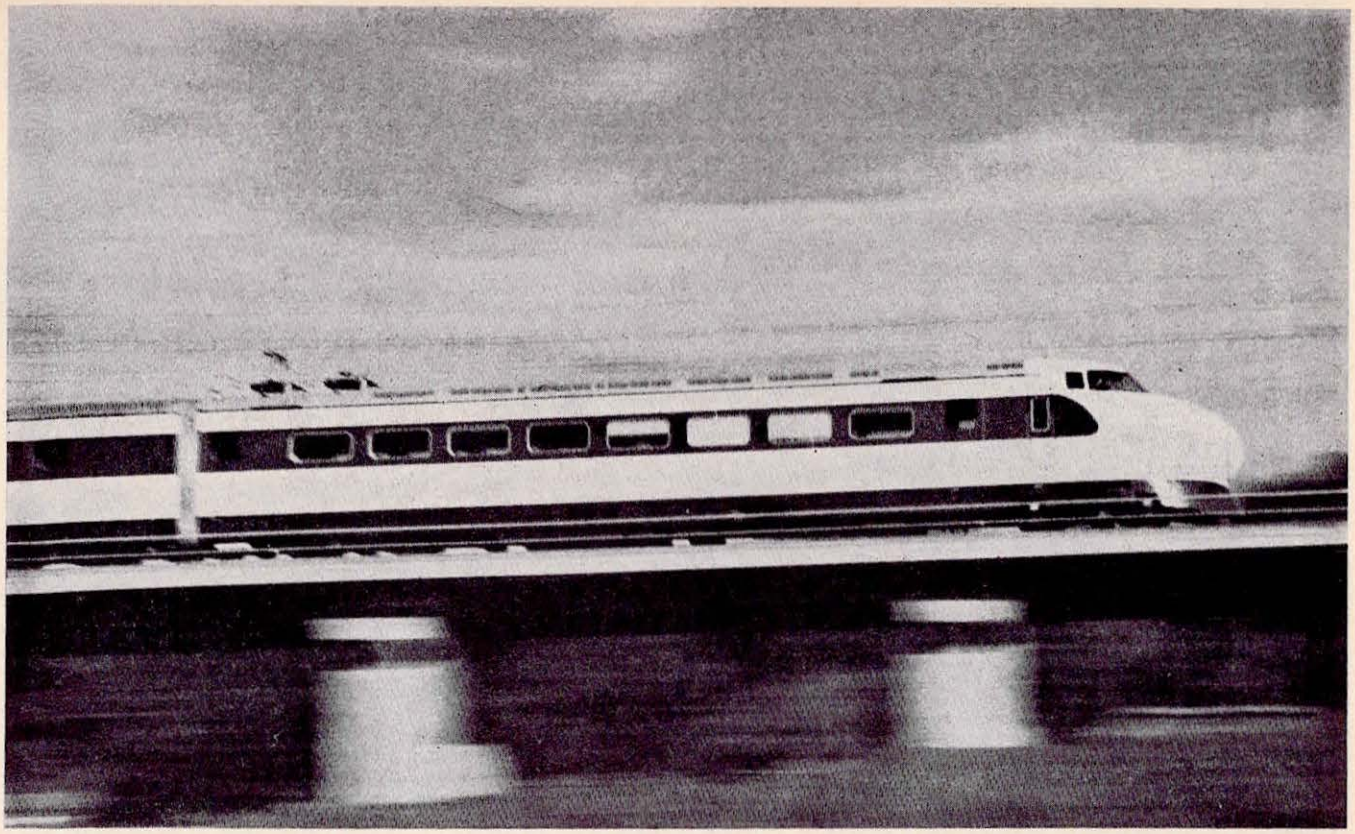
Selling passenger service: Five New York area railroads—along with western and southern railroads that have passenger representatives in New York—are cooperating in presenting a series of seminars for travel agents this week. The half-day sessions, according to A. J. Winkler, chairman of the General Passenger Committee—Eastern Railroads, is to "brief agents on the growing sales opportunities on the nation's railroads." The meetings will be held aboard an exhibit train in Grand Central Terminal. Sponsoring railroads are Erie Lackawanna, Long Island, New York Central, New Haven and Pennsylvania.

Trucker dilemma: Rate increases apparently aren't going to solve the money problems created for the trucking industry by the high cost three-year contract negotiated by James Hoffa's Teamsters Union. When the pact was signed, truckers talked openly of a flat 6% rate boost to cover the $500-million plus they paid for labor peace. Since then, however, shippers have been having their say and they're not taking kindly to the idea. The outlook: Rates will go up—but they'll go up far less than the 6% the motor carriers have said they need.

Canada at the Fair: The north country's only exhibit at the New York World's Fair is there courtesy of the Canadian Pacific. CP is telling visitors about Canada and the passenger and freight services the company offers, at a display in the transportation and travel building. There is no Canadian government participation since the New York fair is not recognized by the International Exhibition Bureau, and countries belonging to the Bureau were prohibited by it from participating.

Current statistics

Net income, estimated	
12 mos., 1963	$651,000,000
12 mos., 1962	572,000,000
Carloadings, revenue freight	
17 wks., 1964	8,996,618
17 wks., 1963	8,839,499
Freight cars on order	
Apr. 1, 1964	36,919
Apr. 1, 1963	20,970
Freight cars delivered	
3 mos., 1964	17,300
3 mos., 1963	9,545
Serviceable cars	
Mar. 1, 1964	1,411,426
Mar. 1, 1963	1,416,368



TRAINS VS PLANES

You might think planes have the edge, particularly in speed. Not entirely true. The new Hitachi Superexpress, for example, streaks down the tracks at a phenomenal 155 mph.

Faster Than Aircraft. When the Superexpress goes into operation later this year it will equal total airline time on the Tokyo-Osaka run, a distance of 320 miles in only three hours. On shorter runs the train is even faster than aircraft. A new era in railroading is about to begin.

Add to the speed the convenience of one carrier, no to and from airport travel, no waiting. You go downtown to downtown in one comfortable seat. With the introduction of the Superexpress Hitachi has achieved what many experts believed impossible—trains that effectively compete with airlines.

Electronic Control. The Superexpress is guided by a Hitachi designed electronic control in the train, in addition to a motorman, and a supervisory control room in Tokyo. The train automatically increases speed when the line is clear, automatically slows down or stops when the line is not clear. The human error factor is eliminated. The electronic control permits up to 180 trains to operate on the Tokyo-Osaka route at even speeds.

This is Hitachi and one example of its superiority in rolling stock. Others can be seen in many parts of the world—Malaysia, Thailand, Bolivia, Argentina, Taiwan, Burma, Korea, Philippines, Egypt and India.

Whatever your particular requirements—locomotives, coaches, shunters or freight cars powered by diesel hydraulic, diesel electric, AC, DC or combined AC-DC, built to any specifications —talk first to Hitachi. First in Japan, world-wide in reputation.

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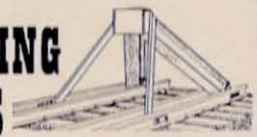
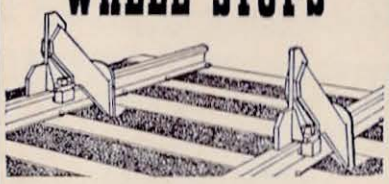


BUMPING POSTS



WHEEL STOPS

Write for 1964 catalog and price list.

Hayes Track Appliance Co.
RICHMOND, INDIANA

SIDE TRACK
SECURITY

(Product Reference 40A)

PEOPLE

BANGOR & AROOSTOOK.—**Richard W. Sprague,** assistant director of public relations and editor of Maine Line, employee publication, promoted to director of public relations, Bangor, Me.

KANSAS CITY SOUTHERN.—**Robert E. Zimmerman** named general attorney, Kansas City, Mo., succeeding the late **C. H. Rimann. Robert W. Spachman** appointed assistant general attorney, Kansas City.

Paul S. Rhoads named district freight agent, Houston, to succeed **Henri H. Riddle,** who retired Feb. 29 after more than 39 years' service. **James L. Connor, L. L. Moore,** and **John T. Powell** appointed general freight agents, all with headquarters at Kansas City.

MISSOURI PACIFIC-TEXAS & PACIFIC.—**E. R. Lauman,** general auditor, St. Louis, named senior assistant controller there, and his former title eliminated. The position of assistant general auditor, held by **E. F. Becktame,** changed to assistant controller.

NEW YORK CENTRAL.—**Del Forest Harbaugh,** district freight sales manager, Omaha, appointed assistant freight sales manager, Chicago.

SANTA FE.—**Rudolph G. Rydin,** vice president, executive department, Chicago, retired May 1 after 48 years of service.

David H. Yazell, assistant engineer of vegetation control, Albuquerque, N.M., promoted to engineer of vegetation control there, effective May 1, succeeding **Clarence W. Bothe,** who has retired after 45 years with the Santa Fe. **John A. Sterling** appointed supervisor of vegetation control, Albuquerque.

James T. Groundwater, trainmaster, Stockton, Calif., appointed terminal division superintendent, San Francisco, succeeding the late **O. R. Hammit.** Mr. Groundwater will have jurisdiction throughout the Bay Area, including the marine fleet and motor coach operations.

Frank J. Heller
Waugh

Jack Cunningham
Johnson Rubber

Supply Trade

Frank J. Heller, sales representative, **Waugh Equipment Co.,** New York, has been appointed manager, Rapid Transit Division.

Jack Cunningham has been named sales manager, Railroad Products Division, **Johnson Rubber Co.,** Middlefield, Ohio. Mr. Cunningham has been in charge of signal construction and outside plant for the **Quebec North Shore & Labrador** since 1952.

Robert P. Blowers has been assigned to railroad product sales for **Screw & Bolt Corp. of America** at Chicago. Mr. Blowers was formerly resident salesman for the company's western New York State territory.

Ralph L. Haney has been appointed Philadelphia district manager, **The Kerite Co.** Mr. Haney was formerly a field sales manager for Allis-Chalmers.

Dr. Jay Warshawsky, senior technical advisor, major research division, **General American Transportation Corp.,** Niles, Ill., has been appointed technical director of the division.

OBITUARY

Julius J. Alms, 57, vice president, executive department, **Burlington,** died April 25 in Passavant Hospital, Chicago. Mr. Alms was advanced from assistant vice president, executive department, to vice president of that department on April 8 (RA, April 27, p. 67). He was also president and chairman of **Burlington Truck Lines.**

Evan W. Girton, 59, senior vice president, **Chicago South Shore & South Bend,** died April 21 in Lake Forest Hospital, Lake Forest, Ill.

Leonard A. Marquardt, 59, vice president in charge of sales, **W. H. Miner, Inc.,** Chicago, died April 19 in Memorial Hospital, Elmhurst, Ill.

B. E. Wynne, 53, assistant to president, **Western Maryland,** Baltimore, Md., died April 24.

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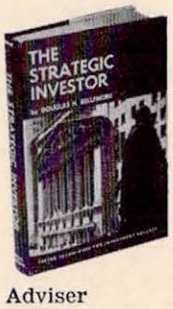

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Brenco, Inc. 6
Budd Company, The 9
Colorado Fuel and Iron Corporation, The 28-29
Crucible Steel Company ..... IBC
Electro-Motive Division, General Motors Corporation 3
General Railway Signal Company ..... BC
General Services Administration 40
General Steel Industries St. Louis Car Company 13
Hayes Track Appliance Company 40
Hitachi, Ltd. 39
Hyatt Bearing Division, General Motors Corporation 35
Magnus Metal Division, National Lead Company 10
Shell Oil Company 14
Stanray Corporation ..... IFC
Texaco, Inc. 36
Union Switch & Signal, Division of Westinghouse Air Brake 4
WABCO—Westinghouse Air Brake Company 4

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No victory—no defeat

Peace by negotiation is praiseworthy but it solves no problems unless it improves railroads' ability to attract more traffic.

It is an indispensable but often frustrating process in which the railroads are engaged—trying to inject some sanity and economic realism into the train service working rules. Three times they proved their case to the satisfaction of Presidential boards. Now, as a result of President Johnson's able and well-intentioned efforts at mediation, they have wound up with only a fraction of the changes in practices which impartial tribunals have said they should have.

President Johnson, and many other people, are happy about the "victory for collective bargaining." But what virtue is there in collective bargaining except where it produces results that are both just and realistic economically? Passenger engine crews, and freight enginemen and trainmen, are going to continue drawing a day's pay for 100 miles traveled. That is, they are going to continue getting paid for a day's work when, often, the time they put in may be only 3 or 4 hours—or even less.

Where is the justice in that kind of wage basis? Other employees work 8 hours for a day's pay.

Where is the economic realism in paying a day's wages for 100 miles run in railroad service—while bus and truck drivers do 200 miles or more for a day's pay? Apparently President Johnson's able mediators did not have time to learn much about the railroads' serious competitive problems.

No issue can be considered settled until it is settled right. Some aspects of the working-rules situation have been improved here and there—and a ruinous strike has been avoided. For this outcome, we can all be thankful. But the issue has not been fully resolved, nor will it be so long as trains are overmanned by crews working sub-standard hours.

There is a maxim of jurisprudence to the effect that *no man should sit in judgment in his own cause.* So-called collective bargaining violates this maxim—because each of the parties (including government, if intervenors represent the executive department, rather than being impartial judges) is seeking its own ends. Union leaders are emboldened to ask for more than justice, if they believe they have sufficient "economic power" to win a strike. Managements, being practical-minded people, may be induced to make sacrifices to expediency, if they have doubts of their ability to win in the event of an actual work stoppage.

In the dark ages, before the development of common law, civil causes were settled by force (or show) of arms. Duke Strongarm assembled his retainers and marched against Duke Lionheart and his minions—and the contest was decided in favor of the stronger party.

If a man were accused of a crime, he was put to the ordeal by fire. If he burned to death, he was assumed to be guilty. If he was not guilty, the Lord would not permit the fire to hurt him.

Somewhat more dependable methods of determining the guilt or innocence of persons accused of crimes were, in due course, introduced. And medieval kings eventually became strong enough to prevent their nobles from warring with each other—allowing the royal courts to arbitrate their quarrels. In a thousand years of trial and error, our system of civil and criminal law has gradually evolved. The enforcement of peace and justice through the courts has long been recognized as a primary function of government. Except in industrial disputes. These are still resolved, largely, by strikes and threats of strikes—with victory going, not necessarily to the party with justice on his side, but often to that with the toughest leaders or the most persuasive political situation.

There is certainly nothing against collective bargaining, as such, but it is only an instrument—a tool—good if it promotes peace with justice and useless and even harmful if it does not.

Other needed remedies

Perhaps, as has been reported, the executive branch of the government would be receptive to rulings by the treasury department which might appreciably reduce railroad taxes. Perhaps a beginning is about to be made in the establishment of realistic charges for the use of highways, waterways and air transport facilities. Perhaps some progress may soon be made in the equalization of regulation between the railroads and rival agencies of transportation. And there has been at least some progress, however modest, in the amelioration of obsolete working rules.

Further accomplishments in any or all of these directions would prove extremely helpful. At least partial victory in attaining these objectives is a reasonable expectation, provided only that they are pursued relentlessly, despite all discouragements and temporary set-backs. Railroad managements have shown that they have a virile team representing them in their labor relations. They have able operators, also, handling their relations with the public, with customers, and with the government. Unwavering solidarity in support of the officers responsible in these areas is what is needed most.

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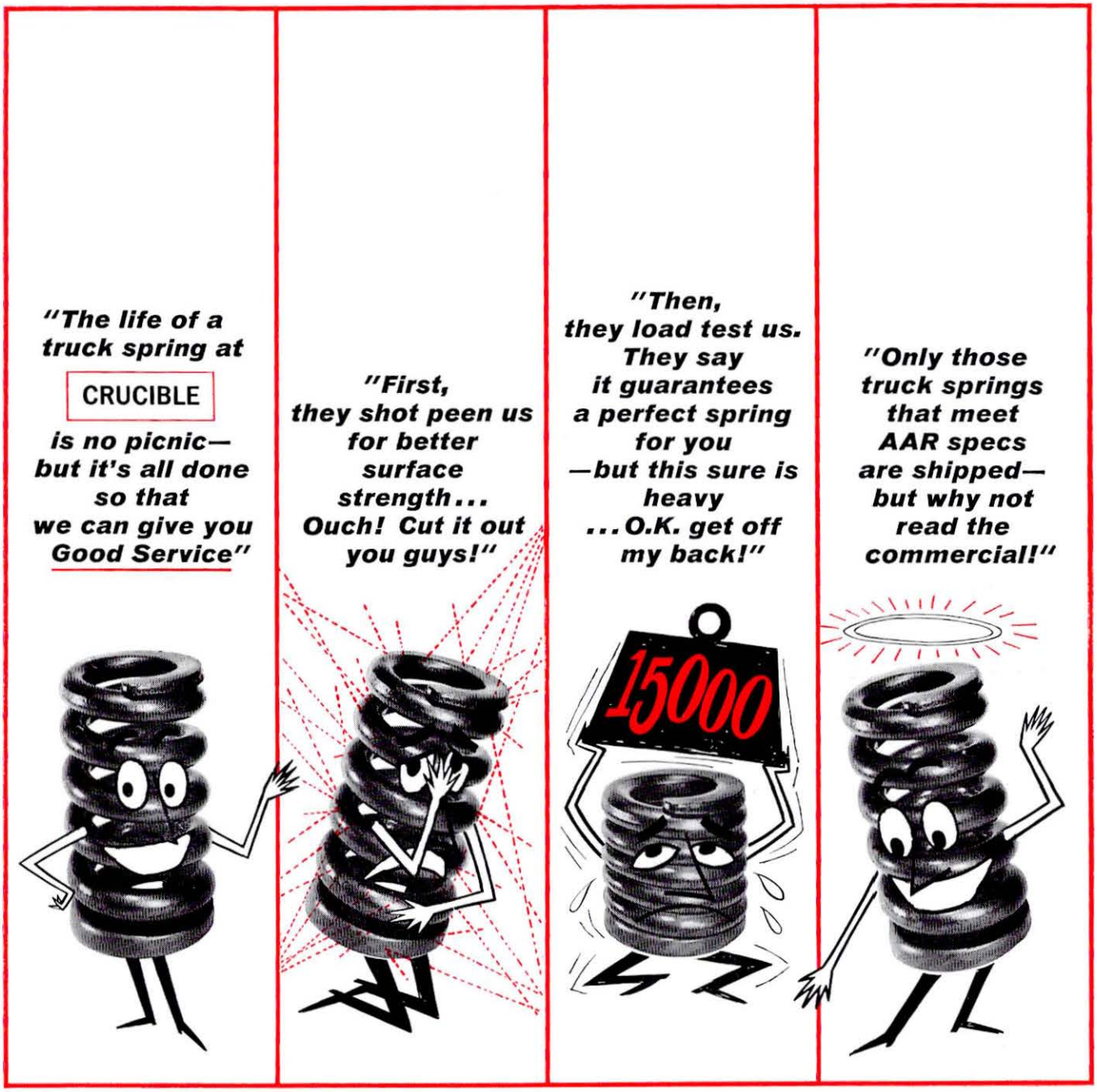
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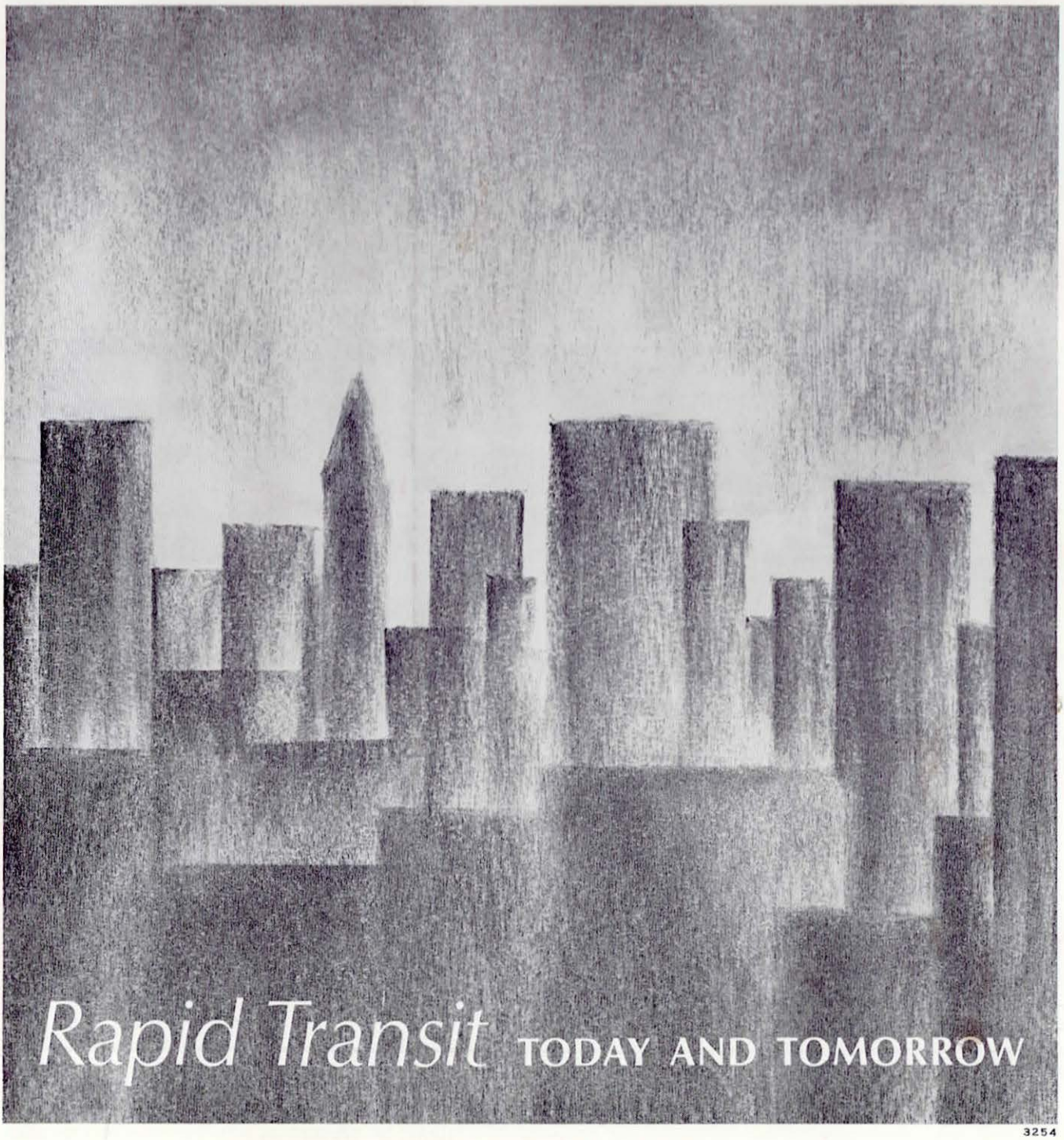

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